THE TAXONOMY OF THE DREPANINAE REPRESENTED IN CHINA, WITH AN ACCOUNT OF THEIR WORLD DISTRIBUTION (LEPIDOPTERA : DREPANIDAE)

BY

A. WATSON

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CONTENTS

SYNOPSIS

A review is given of the taxonomy and distribution of the 76 species of Chinese Drepaninae, and the taxonomic status of a further 8 species is examined. The genera *Agnidra*, *Albara*, *Betalbara*, *Callicilix*, *Didymana*, *Nordstroemia* and *Pseudalbara* are revised. A new genus, *Paralbara*, 14 new species and 10 new subspecies are described. 30 names are newly placed in synonymy, three names are extracted from synonymy, and 31 changes in the combination of species-group and generic names are made. A key to the genera of Drepaninae found in China is given. The world distribution of the genera, species and subspecies of Drepaninae represented in China is discussed. The species distribution is compared with that of the Oretinae, the other subfamily of Drepanidae present in China. For purposes of this paper China, Formosa and Tibet are included in the term ' China '.

INTRODUCTION

The British Museum (Natural History) has for several years possessed Drepaninae material from Szechwan and adjacent provinces of China, chiefly from the collections of Charles Oberthür and J. H. Leech. In the early 1960's I was able to study the Drepaninae from the valuable collection made by the late Dr. H. Höne (see Gross, 1962), now housed in the Museum Alexander Koenig, in Bonn, Germany, which includes examples from eastern and central provinces of China where little or no previous collecting had been carried out. The collection at Bonn together with the BM(NH) material and specimens from several European museums and the United States National Museum have made possible this survey of the Drepaninae of China.

The opportunity has been taken to broaden the scope of this paper to include related species from India, Japan and other areas associated zoogeographically with

China wherever sufficient material was available or where knowledge of these species is particularly relevant to the identification and distribution of the Chinese species. This inclusion of non-Chinese species anticipates, to some extent, future records of species not yet known from China. Seven of the Drepaninae genera represented in China have been revised as a result of this wider treatment.

The nominal genera *Ditrigona* Moore (1887 : 258), *Peridrepana* Butler (1889 : 43) and *Leucodrepana* Hampson (1892 : 333) are excluded from discussion in the following paper as they are currently being revised by Dr. C. Wilkinson. A revision of *Teldenia* Moore (1882 : 119) was published by Wilkinson (1967) during the final stages of the preparation of this paper. Two species of *Teldenia* have been recorded from China.

Apart from the extensive collection in the Museum Koenig, Bonn, important material has been lent to me by the following museums and institutes : Hope Department, University Museum, Oxford, U.K. ; Landhauptstadt Wiesbaden Städtisches Museum, Germany ; Muséum national d'Histoire naturelle, Paris, France ; Naturhistorisches Museum, Vienna, Austria ; Naturhistoriska Riksmuseet, Stockholm, Sweden ; Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands ; United States National Museum, Washington, D.C., U.S.A. ; Zoological Institute, Academy of Sciences of the U.S.S.R., Leningrad, U.S.S.R. Further material was borrowed from the private collections of Drs. F. Daniel (Munich), H. Inoue (Japan), and H. Yamamoto (Japan). The types of nearly all the nominal species mentioned in the text have been examined by the author either in the BM(NH) or in European museums. The types of Matsumura species have been kindly studied for me by Dr. H. Inoue in Japan. Lectotypes have been selected where necessary and where it has been possible to examine the syntypic material.

I should like to acknowledge the generous co-operation of the following workers who have helped by arranging loans of material or in other ways : Dr. C. Besuchet, Geneva, Switzerland ; Dr. F. Daniel, Munich, Germany ; Dr. D. Davis, Washington, D.C., U.S.A. ; Dr. W. D. Duckworth, Washington, D.C., U.S.A. ; Dr. M. Falkovitch, Leningrad, U.S.S.R. ; Mr. D. S. Fletcher, London, U.K. ; Dr. W. Forster, Munich, Germany ; Dr. E. Franz, Frankfurt-am-Main, Germany ; Dr. F. J. Gross, Wiesbaden, Germany ; Dr. H. J. Hannemann, Berlin, D.D.R. ; the late Dr. B. Hanson, Stockholm, Sweden ; Dr. H. Inoue, Fujisawa, Japan ; Dr. F. Kasy, Vienna, Austria ; Dr. A. I. Kurentzov, Vladivostok, U.S.S.R. ; Dr. C. Lemaire, Paris, France ; Dr. B. Mannheims, Bonn, Germany ; Dr. I. W. B. Nye, London, U.K. ; Dr. E. C. Popham, Salford, U.K. ; Dr. U. Roesler, Bonn, Germany ; Dr. K. Sattler, London, U.K. ; Dr. H. Schröder, Frankfurt-am-Main, Germany ; Mr. E. Taylor, Oxford, U.K. ; Dr. E. Todd, Washington, D.C., U.S.A. ; Professor G. C. Varley, Oxford, U.K. ; Dr. P. Viette, Paris, France ; Mr. P. E. S. Whalley, London, U.K. ; Dr. C. Wilkinson, Portsmouth, U.K. ; Dr. H. Yamamoto, Fukuoka, Japan. The technical assistance of Miss K. Brookes, Miss R. Hauenstein and Mrs. J. E. Saunders is also gratefully acknowledged.

It would be difficult to overestimate the magnanimous help given to me by the late Dr. H. Höne of the Museum Koenig, Bonn, who made available his superb

Chinese collection. My thanks are also to his widow whose many kindnesses during my work on the collection at Bonn are not forgotten.

The photographic work was done in the Photographic Section of the British Museum (Natural History) under the supervision of Mr. M. G. Sawyers.

Text-figures 1, 5, 9, 12, 18, 19, 20, 27, 57, 61, 108, 114, 128, 132, 133, 138, 143, 149, 153, and 158 were drawn by Mr. Arthur Smith. The remaining drawings, except for text-figures 89–96, 101–104, 165–182, 203–218, 251–274 and 291–293, which were drawn by the author, were prepared by Mrs. J. E. Saunders.

The term ' **comb. rev.**' is used to denote a change in the combination of a specific or subspecific name and a generic name which restores a previously published combination ; ' **comb. n.**' is used in the usual way to denote a new combination ; '**sp. rev.**' and ' **ssp. rev.**' are used to denote, respectively, species and subspecies names which have been removed from synonymy. BM(NH) is an abbreviation of British Museum (Natural History). Names of other institutions have been shortened, not abbreviated in the strict sense, the full titles being given above. Bibliographical references in the text are given mainly in a shortened form, the full reference appearing at the end of the paper.

The form of the descriptions is similar to that in Watson (1965 : 7) except that the fore wing measurements are given in the following sequence : range of measurements in the material examined from apex to centre of mesoscutum, followed, in parentheses, by the number of specimens measured. Some of the more unusual morphological characters merit comment here. For example, in *Cilix*, $Sc + R_1$ (vein 8) anastomoses with the base of the cell a short distance after it arises from the base of the hind wing, in contrast with most other Drepanidae in which $Sc + R_1$ anastomoses with or approximates to *Rs* for a short distance distal to the end of the cell. The only other exceptions found so far are *Phalacropsis carnosa* Swinhoe, *Phalacra edentata* Hampson, *Phalacra kerara* Swinhoe and *Phalacra tenera* Swinhoe (see Gaede 1931, for references to original descriptions), all of which are Oriental species that have not been recorded from China. Also unusual in the Drepaninae is the presence in the males of *Pseudalbara* of a vestigial frenulum, which is present as a short costal process concealed by scales. All other Drepaninae have a reasonably well-developed frenulum in the male, as in the Madagascan Nidarinae, but in contrast with the Oretinae, the males and females of which lack a frenulum. Modification of the seventh as well as the eighth abdominal sternum in the male is present in the abdomen of *Paralbara*, *Albara*, *Betalbara*, *Agnidra*, *Thymistida*, *Nordstroemia*, *Didymana* and *Strepsigonia*. The seventh sternite may be symmetrical or asymmetrical bilaterally. In *Strepsigonia* two separate medial sclerites seem to have been derived from the seventh abdominal sternum ; both sclerites are bilaterally asymmetric. The medial eighth abdominal sternite is usually bilaterally symmetric, but can be asymmetric as in *Paralbara*. Lateral sacs are found associated with the pleural region of the eighth segment in some species of *Betalbara* and *Agnidra*, and in one species of *Nordstroemia*. In some species of *Betalbara* and *Agnidra* separate lateral sclerites are placed on either side of the normal medial eighth sternite.

The key to genera and most of the keys to species are based on males alone. There are two main reasons for this : firstly that the females of some species are not yet known, and secondly that it is difficult or impossible at this stage to identify the females of some groups of closely related species.

Reference to a particular country or area in the paragraph on distribution in each species description indicates that material from there has been identified during the present study.

DISTRIBUTION

Generic distribution. (See Table 1.) Most of the genera of Drepaninae which occur in China have been recently revised, or are fairly well known in that their taxonomy appears to be reasonably satisfactory and that identification of the included species presents little difficulty. It has been possible, therefore, to show in Table 1 the world distribution of these genera. Where genera have been revised in the present paper, details of the distribution of all the included species have been given in the Table ; the species of recently revised genera are listed in the Table only if they are known to occur in China, but the full world distribution of each genus is indicated. The species of other genera whose taxonomy is in an acceptable state but which have not been revised recently or in this paper are listed fully. It has been possible to give some idea in the Table of the distribution of the remaining genera only when the generic placement of the included species is considered to be probably correct.

Nine of the 26 genera of Drepaninae present in China are either endemic to the Indo-Chinese Subregion or have a high proportion of Indo-Chinese species with incursions chiefly into the south-eastern limits of the Palaearctic Region and into the Malayan Subregion. *Tridrepana* and *Canucha* extend to the Papuan Subregion, including the Solomons (*Tridrepana*). *Palaeodrepana, Drepana* and *Cilix* do not occur east of the Indo-Chinese Subregion but extend westwards into Europe (including Britain). Although some taxonomic reappraisal of *Strepsigonia, Drapetodes* and *Hyalospectra* is needed, it seems likely that the former two will prove to be chiefly Malayan, while the range of *Hyalospectra* will probably prove to be comparable with that of *Canucha* or *Tridrepana.*

Callidrepana is unique in the Drepaninae in that it is represented both in the Oriental Region and in the Ethiopian Region where three West African species are known (see Watson, 1965). No comment can be made on the details of its Oriental distribution until a generic revision has been carried out.

Although the overall pattern of distribution may be distorted by the possibility of differential extinction and the certainty that the areas involved have not been uniformly covered by collectors, it seems reasonable to suppose that the apparent high percentages of endemism in the Indo-Chinese Subregion represent the real pattern of distribution. *Thymistida, Didymana* and *Thymistadopsis,* for example, are unknown beyond the limits of the Indo-Chinese Subregion, while in *Paralbara, Agnidra, Betalbara, Nordstroemia, Deroca* and *Auzata* the percentages of specific endemism in this Subregion range from 60% in *Betalbara* to 83% in *Auzata.* This

high degree of endemism possibly reflects the enhanced opportunities for speciation in the varied ecological conditions resulting from the Cenozoic elevation of the Himalayas and suggests that this part of south-eastern Asia can reasonably be considered as the probable centre of origin for several Drepaninae genera. The Papuan Subregion forms another centre of endemism in *Tridrepana* and *Canucha*—possibly a secondary centre at least in *Tridrepana* which has a greater proportion of endemic Indo-Chinese species than Papuan species. A pattern of distribution similar to that in *Tridrepana* occurs in *Oreta* (Drepanidae, Oretinae) (see Watson, 1967).

The small genus *Cilix* is known from Western Europe, the Mediterranean area (including North Africa), the Middle East, Afghanistan, northern India, China, Korea, Japan and south-eastern Russia; a pattern which suggests a dispersal route for the genus from a possible Indo-Chinese centre, where the greatest degree of endemism occurs. The pre-Glacial pattern of distribution might, however, have revealed a more northerly route or a much broader North-South distribution.

Specific distribution. (See Table 1.) A total of 76 species of Drepaninae have so far been described from China. A further one or perhaps two species of the genus *Drapetodes* occur there but have not yet been described. Fifty-three species are endemic to the Indo-Chinese Subregion. Sixteen species are shared by the Indo-Chinese Subregion and the Manchurian Subregion of the Palaearctic Region, with two of these species, *Drepana curvatula* and *Palaeodrepana harpagula*, extending into Western Europe and the British Isles. Three species are found in both the Indo-Chinese and Malayan Subregions ; one species occurs in the Indo-Chinese, Malayan and Indian Subregions ; one species is common to the Indo-Chinese and Malayan Subregions and Celebes, and one to the Indo-Chinese, Indian and Malayan Subregions and Celebes. One species is Manchurian but is not known from elsewhere in China. The species of Drepaninae found in China are thus predominantly endemic to the Indo-Chinese Subregion, with incursions chiefly into the adjacent Malayan and Indian Subregions of the Oriental Region and into the Manchurian Subregion of the Palaearctic Region. Only four of the Chinese species extend beyond these limits ; they are *Drepana curvatula* and *Palaeodrepana harpagula* which are found in Western Europe, and *Tridrepana fulvata* and *Canucha specularis* whose ranges extend as far east as Celebes. Except for *specularis*, each of the latter four species is represented at the periphery of its range by a subspecies different from that occuring in China.

Within China, judging from the high degree of endemism and the presence of several groups of closely related species, the provinces of Szechwan and Yunnan apparently form a centre of evolutionary activity for many genera (the Yunnan Centre of de Lattin, 1957), with a second, less well defined centre in the hilly eastern provinces of Chekiang and Fukien.

The distribution of the Chinese species of *Oreta* Walker and *Cyclura* Warren (Drepanidae, Oretinae) (see Watson, 1967), is comparable with that of the Drepaninae except that no species of *Oreta*, or indeed Oretinae, occurs in Western Europe and there is apparently no zoogeographical match in the Drepaninae for the Nearctic

Oreta rosea Walker which is closely allied to the Chinese species *O. pulchripes* Butler. One genus of Drepaninae, *Drepana* Schrank, is represented both in China and the Nearctic Region, but in contrast with *Oreta* the two Nearctic species of *Drepana*, *arcuata* Walker (1855 : 164) and *bilineata* Packard (1864 : 376), apparently have their closest relatives in Western Europe. However *arcuata* is not taxonomically distant from *curvatula* Borkhausen, which is found not only in Western Europe but also in the Oriental Region (including China) and the eastern limits of the Palaearctic Region.

Table 1

The World Distribution of the genera, species and subspecies of Drepaninae represented in China

	Palaearctic Region		Oriental Region [Subdivisions are those of Gressitt (1956)]							Ethiopian Region	Nearctic Region
			Indo-Chinese Subregion		Malayan Subregion	Indian Subregion	Celebes	Philippines	Papuan Subregion		
	Rest of Region	Manchurian Subregion	CHINA	Rest of Subregion							
(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Albara Walker			×	×	×						
reversaria Walker			×	×	×						
reversaria reversaria					×						
reversaria opalescens Warren			×	×							
Paralbara gen. n.			×	×	×						
muscularia Walker			×	×							
perhamata Hampson				×							
spicula sp. n.			×	×	×						
pallidinota sp. n.			×								

(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Thymistida Walker			×	×							
nigritincta Warren				×							
tripunctata Walker			×	×							
undilineata Warren				×							
Agnidra Moore		×	×	×	×	×					
hoenei sp. n.			×								
fulvior sp. n.			×								
furva sp. n.			×								
fenestra Leech			×	×							
specularia Walker				×		×					
corticata Warren			×	×							
corticata corticata				×							
corticata francki ssp. n.			×								
vinacea Moore				×							
scabiosa Butler		×	×								
scabiosa scabiosa		×									
scabiosa fixseni Bryk		×	×								
fuscilinea Watson					×						
discispilaria Moore				×							
Betalbara Matsumura		×	×	×	×						
acuminata Leech		×	×								
manleyi Leech		×	×								
manleyi manleyi		×									
manleyi prolatior ssp. n.			×								
prunicolor Moore			×	×							
leucosticta Hampson			×	×	×						
flavilinea flavilinea Leech			×								
flavilinea flavilinea Leech			×								
flavilinea shensiensis ssp. n.			×								
cupreogrisea Hampson				×							
rectilinea sp. n.			×								
rugosa sp. n.				×	×						
violacea Butler			×	×							
robusta Oberthür			×								
Pseudalbara Inoue		×	×								
parvalu Leech		×	×								
fuscifascia sp. n.			×								
Nordstroemia Bryk		×	×	×	×						
vira Moore			×	×							
bicostata Hampson			×	×							
bicostata bicostata				×							
bicostata opalescens Oberthür			×								
agna Oberthür			×								
problematica Bryk				×							
argenticeps Warren				×							
sumatrana Roepke					×						
japonica Moore		×	×								
grisearia Staudinger		×									

	Palaearctic Region		Oriental Region [Subdivisions are those of Gressitt (1956)]							Ethiopian Region	Nearctic Region
			Indo-Chinese Subregion		Malayan Subregion	Indian Subregion	Celebes	Philippines	Papuan Subregion		
	Rest of Region	Manchurian Subregion	CHINA	Rest of Subregion							
(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
recava sp. n.			×								
lilacina Moore				×							
simillima Moore				×							
siccifolia Roepke					×						
ochrozona Bryk				×							
duplicata Warren			×	×							
humerata Warren				×							
undata sp. n.			×								
Didymana Bryk			×	×							
bidens Leech			×	×							
Palaeodrepana Inoue	×	×	×								
harpagula Esper	×	×	×								
harpagula harpagula Esper	×	×	×								
harpagula olivacea Inoue		×									
harpagula emarginata ssp. n.			×								
harpagula bitorosa ssp. n.			×								
binaria Hufnagel	×										
cultraria Fabricius	×										
Strepsigonia Warren [Generic revision needed. 6 species at present recognized]			×	×	×			×			
diluta Warren			×	×							
other material examined					×			×			
Canucha Walker			×	×	×	×	×		×		
curvaria Walker									×		
sublignata Warren									×		

(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
specularis Moore			×	×	×	×	×				
duplexa Moore				×							
duplexa duplexa Moore				×							
duplexa birmana Moore				×							
bouvieri Oberthür			×								
miranda Warren			×	×							
Drepana Schrank [Generic revision needed. 11 species are at present recognized: generic distribution doubtful.]											
curvatula Borkhausen	×	×	×								
curvatula curvatula Borkhausen	×										
curvatula acuta Butler		×	×								
rufofasciata Hampson			×	×							
pallida Moore			×	×							
pallida pallida Moore				×							
pallida cretacea Moore			×	×		·					
pallida flexuosa ssp. n.			×								
pallida nigromaculata Okano			×								
dispilata Warren			×	×							
dispilata dispilata Warren				×							
dispilata rufata ssp. n.			×								
dispilata griseariperinis Strand			×								
other species											×
Tridrepana Swinhoe [See revision by Watson (1957) for distribution of remaining 24 species.]		×	×	×	×	×	×	×	×		
fulvata Snellen			×	×	×		×				
fulvata fulvata Snellen					×						
fulvata brevis Watson				×							
fulvata, undescribed subspecies			×								
arikana Matsumura			×	×							
arikana arikana Matsumura			×								
arikana falcipennis				×							
crocea Leech		×	×								
unispina Watson			×								
finita Watson			×								
rubromarginata Leech			×	×							
rubromarginata rubromarginata Leech			×								
rubromarginata indica Watson				×							
thermopasta Hampson			×								
maculosa Watson			×								
marginata Watson			×								
fulva Hampson			×	×							
other species						×		×	×		
Callidrepana Hampson [Generic revision needed. 26 species at present recognized.]		×	×	×	×	×	×	×	×	×	

	Palearctic Region		Oriental Region [Subdivisions are those of Gressitt (1956)]							Ethiopian Region	Nearctic Region
			Indo-Chinese Subregion		Malayan Subregion	Indian Subregion	Celebes	Philippines	Papuan Subregion		
	Rest of Region	Manchurian Subregion	CHINA	Rest of Subregion							
(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
patrana Moore		×	×	×							
patrana patrana Moore			×	×							
patrana palleollus Motschulsky		×									
ovata sp. n.			×								
gemina sp. n.			×	×							
gemina gemina				×							
gemina curta ssp. n.			×								
hirayamai Nagano		×	×								
hirayamai hirayamai Nagano		×									
hirayamai forcipulata Nagano			×								
other species					×	×	×	×	×	×	
Drapetodes Guenée [Generic revision needed: 10 species at present recognized]			×	×	×	×	×				
1 or 2 unidentified species (Chinese)			×								
other species				×	×	×	×				
Thymistadopsis Warren			×	×							
albidescens Hampson				×							
trilinearia Moore			×	×							
trilinearia trilinearia Moore				×							
trilinearia pulvis Oberthür			×								
undulifera Hampson			×								
Deroca Walker [Generic revision by Watson (1959).]		×	×	×							
hyalina Walker			×	×							
hyalina hyalina Walker				×							
hyalina latizona Watson			×								
hidda Swinhoe			×	×							
hidda hidda Swinhoe				×							

(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
hidda bifida Watson			×	×							
pulla Watson			×								
inconclusa Walker		×	×	×							
inconclusa inconclusa Walker			×	×							
inconclusa concinna Warren				×							
inconclusa carinata Watson			×								
inconclusa phasma Butler		×	×								
Callicilix Butler		×	×	×							
abraxata Butler		×	×	×							
abraxata abraxata Butler		×									
abraxata nguldoe Oberthür			×								
Auzata Walker [Genus revised by Watson (1959)]		×	×	×							
semipavonaria Walker				×							
chinensis Leech			×								
chinensis chinensis Leech			×								
chinensis prolixa Watson			×								
chinensis arcuata Watson			×								
simpliciata Warren			×	×							
superba Butler		×	×								
superba superba Butler		×									
superba cristata Watson			×								
minuta Leech			×								
minuta minuta Leech			×								
minuta spiculata Watson			×								
ocellata Warren			×	×							
Macrocilix Butler		×	×	×	×						
mysticata Walker		×	×	×							
mysticata mysticata Walker				×							
mysticata watsoni Inoue		×	×								
mysticata brevinotata Watson			×								
maia Leech		×	×	×	×						
taiwana Wileman			×								
orbiferata Walker			×	×	×						
orbiferata orbiferata Walker			×	×	×						
orbiferata cilicoides Snellen					×						
sericea Warren				×							
Hyalospectra Warren [Generic revision needed. Generic distribution doubtful]											
hyalinata Moore			×	×	×	×					
Cilix Leech	×	×	×	×							
glaucata Scopoli	×										
asiatica Bang-Haas	×										
depalpata Strand				×							
filipjevi Kardakoff		×	×								
filipjevi filipjevi Karkakoff		×	×								
filipjevi malivora Inoue		×									
patula sp. n.			×								

	Palearctic Region		Oriental Region [Subdivisions are those of Gressitt (1956)]							Ethiopian Region	Nearctic Region
			Indo-Chinese Subregion		Malayan Subregion	Indian Subregion	Celebes	Philippines	Papuan Subregion		
	Rest of Region	Manchurian Subregion	CHINA	Rest of Subregion							
(Col. 1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
danieli sp. n.			×								
tatsienluica Oberthür			×								
Macrauzata Butler [Genus in need of revision]		×	×	×	×			×	×		
fenestraria Moore				×							
minor Okano			×								
maxima Inoue		×	×								
maxima maxima Inoue		×									
maxima chinensis Inoue			×								
other material examined					×			×	×		
Phalacra Walker [Genus in need of revision. Generic distribution doubtful. 12 species at present recognized.]											
strigata Warren			×	×							
undescribed species			×								

Key to Genera based on the Oriental Species

Males

1 Apex of fore wing falcate (e.g. Pl. 1, fig. 294) 5
– Apex of fore wing not falcate (e.g. Pl. 12, fig. 373) 2
2 Ground-colour of upper surface of wings white 3
– Ground-colour of upper surface of wings not white . . ***DRAPETODES*** (p. 124)
3 Anal angle of upper surface of hind wing with some yellow coloration ***MACROCILIX*** (p. 131)
– Anal angle of upper surface of hind wing with no yellow coloration . . . 4
4 Wings transparent, sparsely scaled . . . . . ***DEROCA*** (p. 127)
– Wings not transparent, ground-colour opaque white . . . . ***CILIX*** (p. 137)

5 Frenulum vestigial, not visible without removal of surrounding scales. Colour-pattern as in Pl. 3, figs. 320 or 321 . . . . . ***PSEUDALBARA*** (p. 65)
– Frenulum well-devloped. Colour-pattern not as in Pl. 3, figs. 320 or 321 . . 6
6 Ground-colour of wings white 7
– Ground-colour of wings not white 11
7 Wings with large transparent areas as in Pl. 13, fig. 378 . ***HYALOSPECTRA*** (p. 136)
– Wings not as in Pl. 13, fig. 378 8
8 Transverse lines on upper surface of hind wing lunulate or dentate . . . 9
– Transverse lines on upper surface of hind wings not indented ***THYMISTADOPSIS*** (p. 124)
9 Antennae lamellate. Hind tibia with two pairs of well-developed spurs ***AUZATA*** (p. 130)
– Antennae not lamellate. Hind tibia with one pair of spurs (*Drepana*) ; or with two pairs of spurs, in which case the outer spur of the proximal pair is vestigial and not visible without removal of the surrounding scales (*Callicilix*) . . . 10
10 Hind tibia with one pair of spurs . . . . . ***DREPANA*** (part) (p. 103)
– Hind tibia with two pairs of spurs . . . . . ***CALLICILIX*** (p. 127)
11 Hind wing with tail or angulate process at outer angle or anal angle . . . 12
– Hind wing without tail or angulate process at outer angle or anal angle . . 13
12 Antenna bipectinate. Outer margin of fore wing with process ***THYMISTIDA*** (p. 24)
– Antenna lamellate. Outer margin of fore wing without process . ***PHALACRA*** (p. 143)
13 Highly lustrous scales present on upper surface of wings ; especially along costa, outer margin and at distal end of cell . . . . ***CALLIDREPANA*** (p. 113)
– Upper surface of wings without highly lustrous scales 14
14 Outer margin of fore wing with process (e.g. Pl. 4, fig. 331) 15
– Outer margin of fore wing without process 16
15 Ground-colour of upper surface of fore wing the same as that of hind wing. Distal third of hind wing yellowish brown, not paler than rest of wing (e.g. Pl. 4, fig. 331) ***PALAEODREPANA*** (p. 92)
– Ground-colour of upper surface of fore wing much darker than that of hind wing. Distal third of hind wing yellowish white, paler than rest of wing (Pl. 11, fig. 357) ***DIDYMANA*** (p. 92)
16 Base and proximal part of shaft of antennae clothed in highly lustrous scales ***NORDSTROEMIA*** (part) (p. 69)
– Antennae without highly lustrous scales 17
17 Ground-colour of upper surface of wings yellow . . . ***TRIDREPANA*** (p. 111)
– Ground-colour of upper surface of wings not yellow 18
18 Postmedial fascia on upper surface of fore wing straight (e.g. Pl. 3, fig. 315) . . 19
– Postmedial fascia on upper surface of fore wing not straight 24
19 Postmedial fascia on upper surface of hind wing arcuate ; dentate or non-dentate . 20
– Postmedial fascia on upper surface of hind wing straight ; not dentate . . 21
20 Hind tibia with two pairs of spurs . . . . . ***AGNIDRA*** (p. 29)
– Hind tibia with one pair of spurs . . . . . ***DREPANA*** (part) (p. 103)
21 Proximal half of costa of fore wing concave or straight ; strongly convex near apex (e.g. Pl. 11, fig. 366) . . . . . ***CANUCHA*** (p. 99)
– Proximal half of costa convex ; not strongly convex near apex 22
22 Antenna uniserrate . . . . . ***AGNIDRA*** (part) (p. 29)
– Antenna bipectinate or lamellate 23
23 Subterminal fascia on upper surface of fore and hind wings represented by series of dots ; fascia darker than rest of wing . . . . . ***ALBARA*** (p. 16)
– Subterminal fascia absent or represented on fore and hind wings by markings other than dots . . . . . ***BETALBARA*** (p. 46)
24 Hind tibia with one pair of spurs 25

– Hind tibia with two pairs of spurs 26
25 Postmedial fascia on upper surface of hind wing lunulate ; the convex side of each lunula faces base of wing . . . . . ***STREPSIGONIA*** (p. 97)
– Postmedial fascia on hind wing not lunulate, or, if lunulate, the convex side of each lunula faces outer margin of wing . . . . . ***DREPANA*** (part) (p. 103)
26 Hind wing without markings or with trace of pattern at anal margin ***NORDSTROEMIA*** (part) (p. 69)
– Hind wing with well-developed pattern 27
27 Antemedial fascia on fore and hind wings straight (Pl. 13, fig. 385) ***MACRAUZATA*** (p. 142)
– Antemedial fascia on fore and hind wing not straight 28
28 Arms of uncus in male genitalia robust and widely separated . ***PARALBARA*** (p. 19)
– Male genitalia not as above . . . . . ***AGNIDRA*** (part) (p. 29)

ALBARA Walker

(Pl. 1, figs. 296–297 ; Text-figs. 1–7)

Albara Walker, 1866 : 1566. [Name adopted from multiple original spelling by the first reviser, Kirby, 1892 : 734.] Type-species, by monotypy, *Albara reversaria* Walker, 1866 : 1567.
Albara Walker ; Gaede, 1931 : 31. [*Partim.*]
'Albaria' ; Walker, 1866 : 1567. [An incorrect original spelling of *Albara* Walker.]

♂. Palp extends to just above labrum ; proximal three-fifths of antenna bipectinate. Upper surface of wings, thorax and abdomen dark violet-grey ; fore wing with weakly marked antemedial fascia, strongly marked oblique postmedial fascia, short arcuate line proximal to postmedial near wing apex, and with ill-defined interrupted subterminal fascia ; hind wing similar to fore wing. Under surface of wings, thorax and abdomen very pale violet-grey, paler and more yellowish at anterior and posterior margins. Vein R_1 arises from near distal end of cell and R_2 from areole in fore wing ; $Sc + R_1$ approximates to Rs for short distance distal to end of cell in hind wing. Mesothoracic tibia with one pair of terminal spurs ; metathoracic tibia with two pairs of spurs.

♂ genitalia : valves short, with processes ; arms of uncus widely separated ; socii small ; diaphragma with strongly sclerotized medial structure ; eighth abdominal tergite and sternite, and asymmetric seventh sternite forming part of genital apparatus.

♀. As for male but with weakly biserrate antennae.

♀ genitalia with asymmetrically placed ostium ; corpus bursae without signum ; eighth and ninth tergites lobate, well developed.

Albara is probably most closely allied to *Paralbara* gen. n. It can be separated from the latter by differences in the wing-pattern and in the male and female genitalia.

Albara Walker, *sensu* Gaede (1931), has been partly restricted and revised by Bryk (1943) and Inoue (1953, 1962). The only species which can be placed correctly in *Albara* is in fact the type-species. The remaining species are transferred in this paper to one or other of the following genera : *Paralbara* gen. n., *Agnidra* Walker, *Pseudalbara* Inoue, *Betalbara* Matsumura, *Nordstroemia* Bryk, and *Thymistadopsis* Warren.

Distribution (see Table 1) : N. India, China, Formosa, Malaysia and Indonesia.

Albara reversaria Walker

(Pl. 1, figs. 296, 297 ; Text-figs. 1–7)

' *Albaria* ' *reversaria* Walker, 1886 : 1567.

Two subspecies are known : the nominate subspecies (Sumatra), and *opalescens* Warren (India, Formosa, China). Two males and eleven females in the BM(NH), from Malaya, differ from the Sumatran material in minor genitalic characters and may prove to represent a new subspecies.

Albara reversaria reversaria Walker

(Text-figs. 1–4)

Albara reversaria Walker ; Gaede, 1931 : 33.

Readily distinguished from *opalescens* Warren by the ♂ genitalia (Text-figs. 1–3), particularly by the shape of the anellus, basal valve processes, medial gnathus process, socii and uncus.

Measurements. ♂ 16·0 mm. (1) ; ♀ 15·0–18·5 mm. (8).

Material examined. Holotype ♀, Sumatra ; in the Hope Department Museum, Oxford. An examination of the genitalia slide made from the abdomen found attached to the type (Drepanidae slide No. 263) has shown that this is not the original abdomen. However the BM(NH) possesses a male and female from Sumatra, the abdomens of which had not been glued on and are doubtless genuine.

Other material. *BM(NH)*. SUMATRA : 1 ♂, Barisan Range, Western slopes, 2500 ft., x–xi.1961 (*Pratt*) ; 1 ♀, Lebong Tandai, 6.xii.1921 (*Brooks*).

Albara reversaria opalescens Warren **stat. n.**

(Pl. 1, figs. 296, 297 ; Text-figs. 5–7)

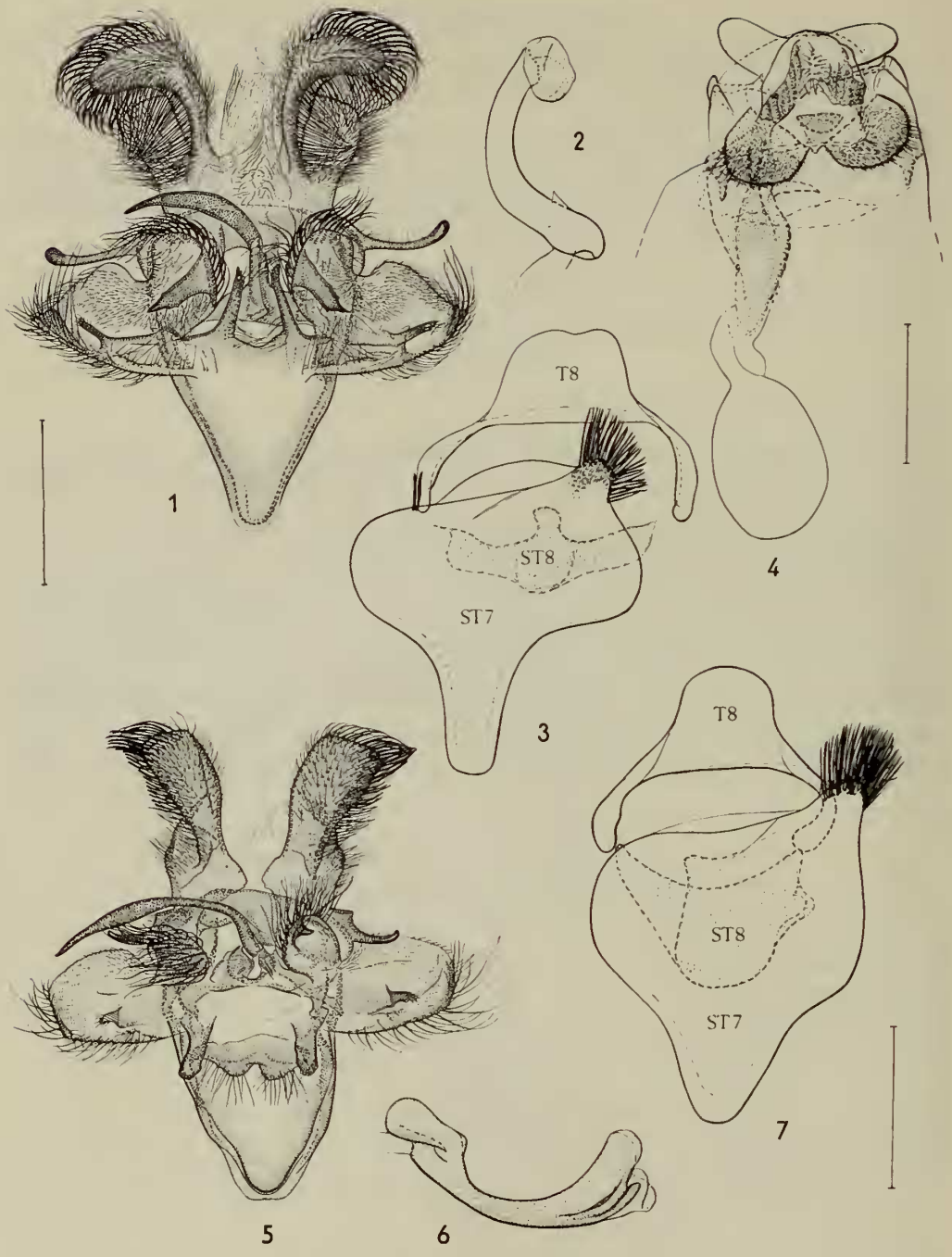
Albara opalescens Warren, 1897 : 12.
Albara opalescens Warren ; Warren, 1922 : 468. [Fig.]
Albara opalescens Warren ; Gaede, 1931 : 32.
Albara griseotincta Wileman, 1914 : 268. **syn. n.**
Albara griseotincta Wileman ; Gaede, 1931 : 31.
Albara horishana Matsumura, 1921 : 948. **syn. n.**

Apparently indistinguishable externally from the nominate subspecies, but with distinctive male genitalia. The female is unknown.

Wing. ♂ 15·0–19·5 mm. (9).

I have not seen the type of *horishana* Matsumura, but this has been kindly examined for me in Japan by Dr. H. Inoue.

Material examined. Types. *opalescens*. LECTOTYPE ♂, here selected, labelled : Khasis, Oct. 1895, Nat. Coll. ; *Albara opalescens* Warr. Type ♂ ; Drepanidae genitalia slide No. 782. In the BM(NH).



FIGS. 1–7. *Albara*, genitalia. 1–4, *reversaria reversaria*. 1, ♂ ; 2, aedeagus ; 3, seventh and eighth sternites, and eighth tergite ; 4, ♀. 5–7, *reversaria opalescens*, ♂. 5, ♂ ; 6, aedeagus ; 7, seventh and eighth sternites, and eighth tergite.

griseotincta. Holotype ♂, FORMOSA : Kanshirei, 1,000 ft., 20,29.v.1906 (*Wileman*). In the BM(NH).

Other material. *BM(NH)*. FORMOSA : 1 ♂, Central Formosa, 1959. INDIA : 6 ♂, Khasis, x.1895 (2 ex.). *Museum Koenig, Bonn*. CHINA : 1 ♂, Kwangtung, Linping, 1.iv.1924 (*Höne*).

PARALBARA gen. n.

(Pl. 1, figs. 294, 295, 298, 299 ; Text-figs. 8–20)

(Gender : feminine)

Type-species *Fascellina muscularia* Walker, 1866 : 1554.

♂. Palp extends to just above labrum. Antenna bipectinate from base to about three-quarters of its length. Upper surface of wings dull greyish brown or buff. Vein R_1 arises from distal end of cell in fore wing and R_2 from distal end of areole. Fore wing with poorly marked, lunulate antemedial and postmedial fasciae ; usually with ill-defined subterminal fascia or spots ; and with spot, or group of spots or patches, at posterior angle of cell. In hind wing $Sc + R_1$ approximates to Rs for short distance distal to end of cell ; similar to fore wing in pattern but with subterminal fascia very weakly marked. Under surface of wings pale lustrous grey or greyish buff, with diffusely marked postmedial and subterminal fascia ; wings darkest proximal to postmedial fascia.

Thorax and abdomen similar in colour to adjacent surface of wings. Mesothoracic tibia with one pair of spurs, metathoracic tibia with two pairs of spurs.

♂ genitalia : seventh abdominal sternum modified into two sclerites, asymmetric ; eighth tergite tapered or truncate posteriorly ; eighth sternite narrow anteroposteriorly ; valve small with large inwardly directed process at base ; saccus well-developed ; diaphragma with medial sclerotization, very strongly developed in *spicula* ; uncus bifid, robust ; aedeagus sinuous.

♀. As for ♂ but with weakly biserrate antennae and apex of fore wing more strongly produced.

♀ genitalia : seventh abdominal sternite emarginate posteromedially ; bursa copulatrix with single ovate, concave signum, or without signum ; ostium surrounded by nearly circular plate ; eighth and ninth tergites moderately well sclerotized.

Paralbara can be distinguished from its closest apparent relative, *Albara* Walker, by the wing-pattern and by the genitalia of both sexes.

I include in this genus two species transferred from *Albara* Walker and two new species.

Distribution. N. India, Sikkim, Bhutan, Burma, China (*muscularia*, *pallidinota*, *spicula*) and Malaysia. (See Table 1.)

KEY TO SPECIES. BOTH SEXES

1 Single, large, pale, diffusely marked patch distal to end of cell on fore wing (Pl. 1, fig. 295). ♀ genitalia as in Text-fig. 20 . . . . . ***pallidinota*** (p. 24)

– Fore wing with pale patch absent distal to end of cell or if present then associated with other patches immediately posterior to it. ♀ genitalia not as in Text-fig. 20 . 2

2 Collar and base of antenna orange-yellow ; anterior part of subterminal fascia on

fore wing dark brown ; costa orange-yellow ; postmedial fascia on hind wing simple (Pl. 1, fig. 294). Genitalia as in Text-figs. 8–11 . . ***muscularia*** (p. 20)

– Collar and base of antenna without orange-yellow scales ; anterior part of subterminal fascia on fore wing pale grey (lighter than surrounding area of wing (Pl. 1, figs. 298, 299) ; costa not orange-yellow ; postmedial fascia of hind wing double. Genitalia not as in Text-figs. 8–11 3

3 Genitalia as in Text-figs. 12–15 . . . . . ***perhamata*** (p. 22)

– Genitalia as in Text-figs. 16–18 . . . . . ***spicula*** p. 22)

Paralbara muscularia (Walker) comb. n.

(Pl. 1, fig. 294 ; Text-figs. 8–11)

Fascellina muscularia Walker, 1866 : 1554.
Albara muscularia (Walker) Warren, 1922 : 468.
Albara muscularia (Walker) ; Gaede, 1931 : 32.
Drepana orphnina Hampson, [1893] : 337. **syn. n.**
Albara orphnina (Hampson) Warren, 1922 : 468.
Albara orphnina (Hampson) ; Gaede, 1931 : 32. [The male and female syntypes of *Albara orphnina* ab. *subpallida* Warren are conspecific with the neotype of *muscularia*.]
Albara inaequidiscata Warren, 1922 : 469. [Good figs.] **syn. n.**

Distinguished from the closely allied *perhamata* by the following characters: collar and base of antenna orange-yellow ; fore wing with anterior part of subterminal fasciae dark brown ; costa orange-yellow ; postmedial fascia of hind wing simple, all fascia poorly marked ; distal half of wing only slightly paler than proximal half. The male and female genitalia are characteristic (Text-figs. 8–11).

Wing. ♂ 14·5–20·5 mm. (24) ; ♀ 17·0–20·5 mm. (10).

There is some variation in the size of the whitish cell markings on the upper surface of the wings. In the lectotype and paralectotype of *inaequidiscata* and in one other male specimen these markings are large and conspicuous (see Warren, 1922 : pl. 49f). In the remaining specimens the cell markings are either minute or absent.

Distribution. N. India, N. Burma, and China.

Material examined. Types. *muscularia*. No trace can be found of the original type material which was stated by Walker (1866 : 1554) to be male, from ' North Hindostan ', and to be deposited in the collection of A. E. Russell. The Russell collection, however, is apparently lost (see Horn and Kahle, 1937 : 380). There is no trace of the type material either in the BM(NH) or in the Hope Department Museum, Oxford, where much of Walker's original material is deposited. I therefore select as NEOTYPE a ♂ in the collection of the BM(NH) labelled: Darjeeling, 22.viii.1886 (*H. J. Elwes*) ; Rothschild Bequest B. M. 1939–1 ; B. M. negative No. 29101.

orphnina. Holotype ♂, India, Naga Hills, 5500–7000 ft., viii–ix.1899 (*Doherty*) ; Drepanidae genitalia slide No. 948. In the BM(NH).

inaequidiscata. LECTOTYPE ♂, here selected Khasis Nat. Coll. ; H. J. Elwes ; *Albara inaequidiscata* Type ♂ Warr. ; Rothschild Bequest B. M. 1939–1. In the BM(NH).

FIGS. 8–11. *Paralbara muscularia*, genitalia. 8, ♀ ; 9, ♂ ; 10, ♂ seventh and eighth sternites and eighth tergite ; 11, aedeagus.

Other material. *BM(NH)*. India : 2 ♂, 2 ♀, Assam, Khasis, 1894 ; 1 ♂, 1 ♀ Cherrapunji, vii.1893 ; 4 ♂, Darjeeling, 20.vii.1886, 6.iii.1889 (*Elwes, Pilcher*) ; 1 ♂, Shillong, 26.x.1918. 1 ♂, Bengal ; 1 ♂, N. India ; 1 ♂. Sikkim : 3 ♂, 3 ♀, 14.ix.1888, 1889, 8.vii.1891, ix.1909 (*Elwes, Dudgeon, Möller*). Bhutan : 1 ♀. Burma : 1 ♂, 1♀, Upper Burma, Htawgaw, 6000 ft. (*Swann*) ; 1 ♂. N. E. Burma, Kambaiti, 7000 ft., 9.vi.1934 (*Malaise*) ; 3 ♂, Mt. Victoria, Pakokku, Chin Hills, 2200 m., 5–30.vi.1938 (*Heinrich*). China : 1 ♀, Kwanhsien [this may prove to represent a new subspecies].

Paralbara perhamata (Hampson) comb. n.

(Pl. 1, fig. 299 ; Text-figs. 12–15)

Drepana perhamata Hampson, [1893] : 336.
Albara perhamata (Hampson) Warren, 1922 : 468. [Figs.]
Albara perhamata (Hampson) ; Gaede, 1931 : 32.

This species apparently forms a superspecies with *spicula*, from which it is distinguished only by the genitalia. It is separable from *muscularia* by the absence of orange-brown scaling on the costa, collar and antenna, by the very pale postmedial fascia on the fore wing, and by the usually yellowish brown distal half of the hind wing, bordered proximally by a double postmedial fascia. The male and female genitalia are also diagnostic.

Wing. ♂ 16·0–19·9 mm. (12) ; ♀ 21·5 mm. (1).

Distribution. N. E. India and Sikkim.

Material examined. Type. I select as LECTOTYPE a ♀ syntype in the BM(NH) labelled : Jaintia [N. E. India], 2–4000, Oct. 87 ; *Drepana perhamata* Hmpsn ♀ ; Coll. H. J. Elwes ; Drepanidae genitalia slide No. 950.

Other material. *BM(NH)*. India : 7 ♂, Assam, Khasia Hills ; 1 ♂, Naga Hills, 1500 ft., ix–x.1889 (*Doherty*). Sikkim : ix.1909 (*Möller*).

Paralbara spicula sp. n.

(Pl. 1, fig. 298 ; Text-figs. 16–19)

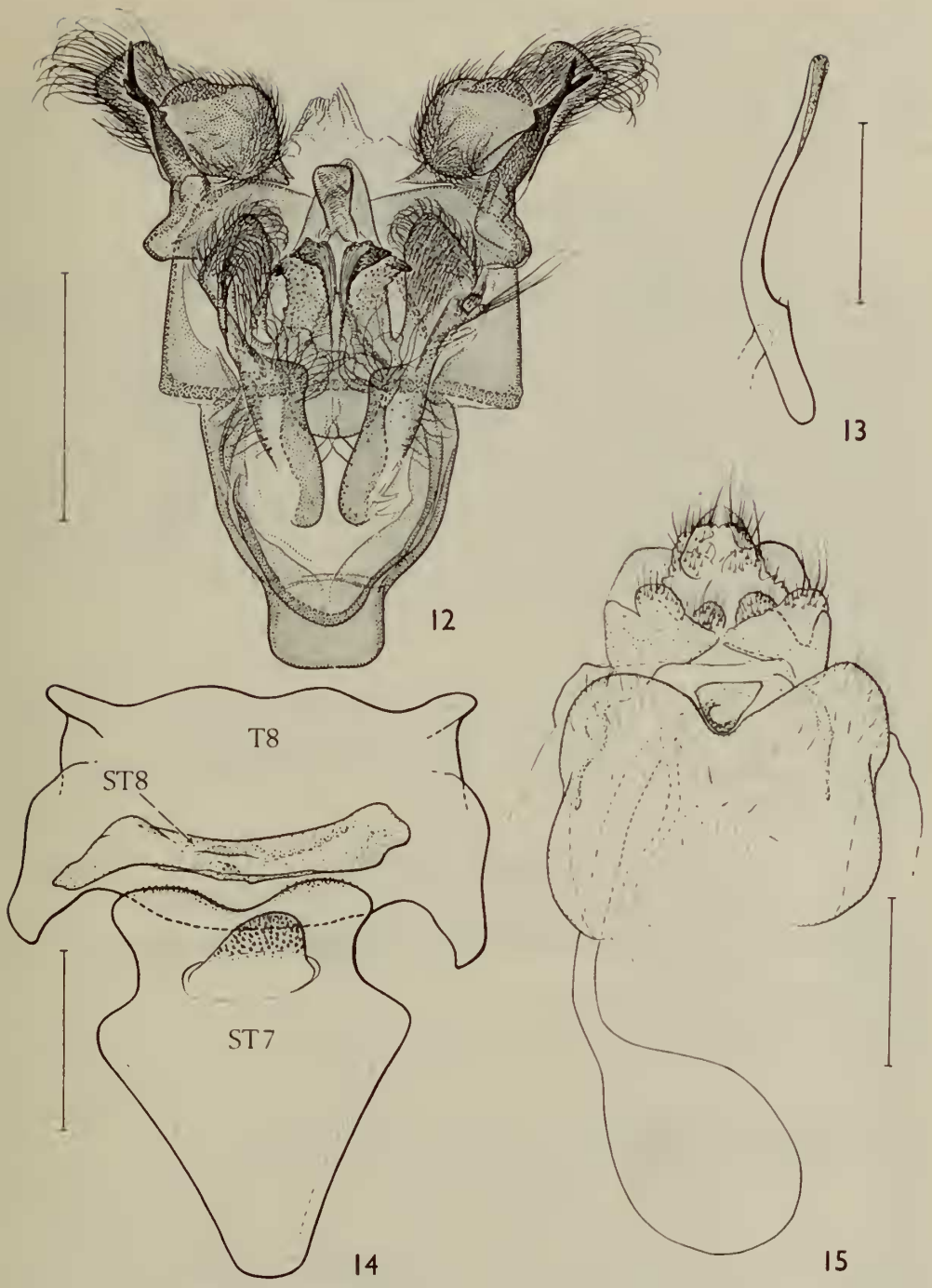
The male and female genitalia distinguish this species from *perhamata* ; in particular, the shape of the seventh sternite, uncus, and the elongate gnathus processes and socii in the male, and the ostial plate in the female.

Wing. ♂ 14.5–17.0 mm. (5); ♀ 42.5 mm. (1).

Holotype ♂. S. China : [Kwangtung], Linpging, v.1922 (*Höne*) ; Drepanidae genitalia slide No. 947. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 2 ♂, Kwangtung, Lingping, 3.v.1922 (*Höne*) ; 1 ♂, Kwangtung, Canton (*Höne*).

Other material. 1 ♂, without abdomen, from Fukien, Kuatan, in the Museum



FIGS. 12–15. *Paralbara perhamata*, genitalia. 12, ♂ ; 13, aedeagus ; 14, ♂ seventh and eighth sternites and eighth tergite ; 15, ♀.

Koenig, Bonn, probably represents this species. 1 ♂, Borneo, in the Zoologisches Museum, Berlin (see below).

This species apparently replaces *perhamata* in China, the two forming a superspecies. The single male from Borneo, Kina Balu, probably represents a new subspecies of *spicula*.

Paralbara pallidinota sp. n.

(Pl. 1, fig. 295 ; Text-fig. 20)

Readily distinguished from its close allies *perhamata* and *muscularia* by the colour-pattern and the distinctive female genitalia, especially the shape of the ostial plate and the presence of a signum.

♂. Vertex of head and outer surface of palp dark brown ; front of head dark brown, but brown just above labrum ; collar pale yellow-brown; antenna pale greyish brown.

Thorax and abdomen greyish brown dorsally, much paler ventrally. Wing-pattern of upper surface as in Pl. 1, fig. 295 : palest areas grey ; ground-colour brown with proximal half of fore wing reddish brown ; slightly lustrous ; costa of fore wing dull yellowish orange. Under surface of both wings very pale brownish grey, each with broad, slightly darker band along outer margin ; fore wing darker at base costad and with dull yellowish orange costal area distad. Outer surface of prothoracic leg dark brown ; outer surface of mesothoracic leg pale greyish brown ; legs otherwise very pale brownish grey.

♀ genitalia as in Text-fig. 20.

Wing. ♀ 20·0–22·0 mm. (2).

♂. Not known.

Holotype ♀. China : N. Yunnan, Likiang, *c.* 2000 m., 8.viii.1934 (*Höne*) ; Drepanidae genitalia slide No. 953. In the Museum Koenig, Bonn.

Paratype. Museum Koenig, Bonn. China : 1 ♀, N. Yunnan, Likiang, 8.viii–16.ix.1934 (*Höne*).

THYMISTIDA Walker

(Pl. 1, fig. 300, Pl. 14, figs. 389–392 ; Text-figs. 21–24)

Thymistida Walker, 1865 : 515. Type-species *Thymistida tripunctata* Walker, 1865 : 515, by monotypy.

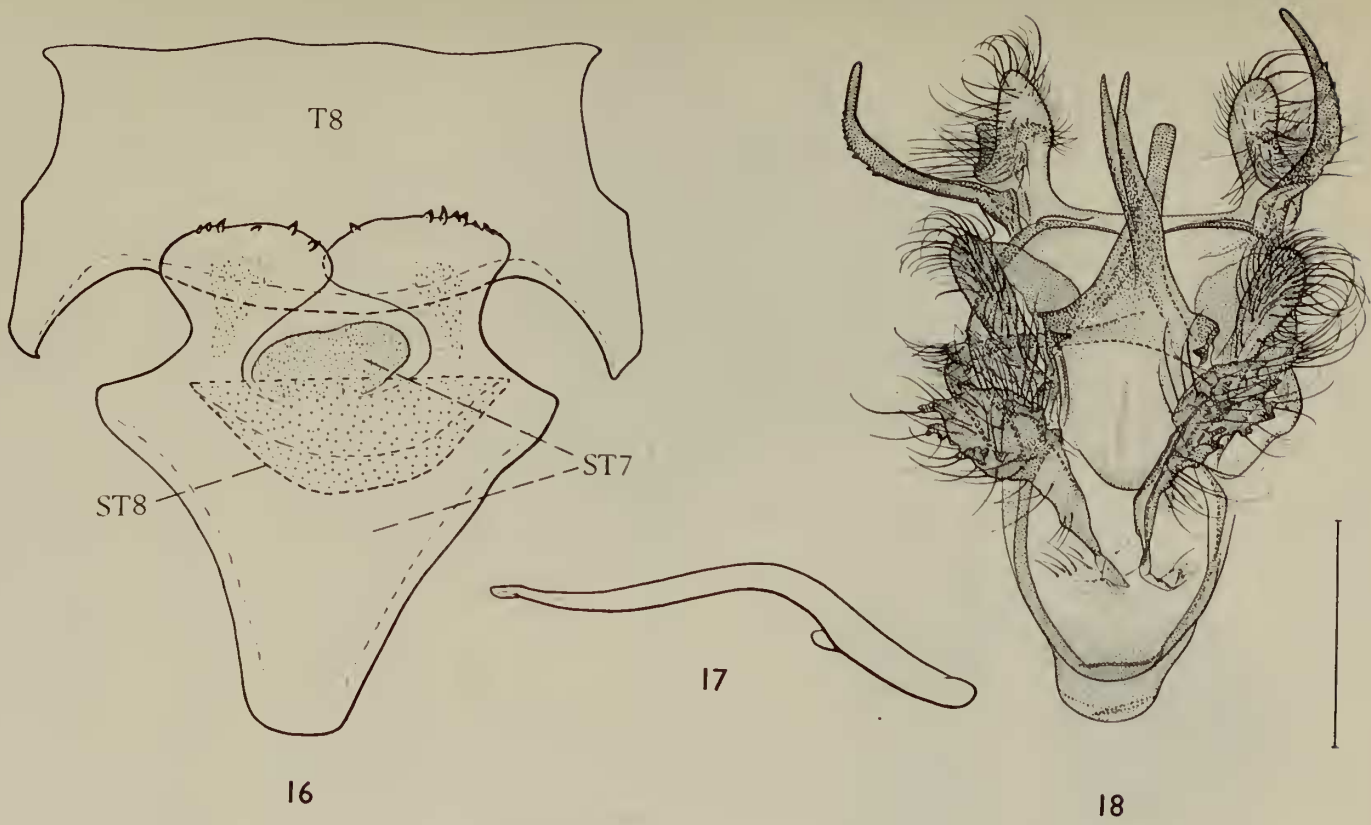
Thymistida Walker ; Warren, 1923 : 474.

Thymistida Walker ; Gaede, 1931 : 39.

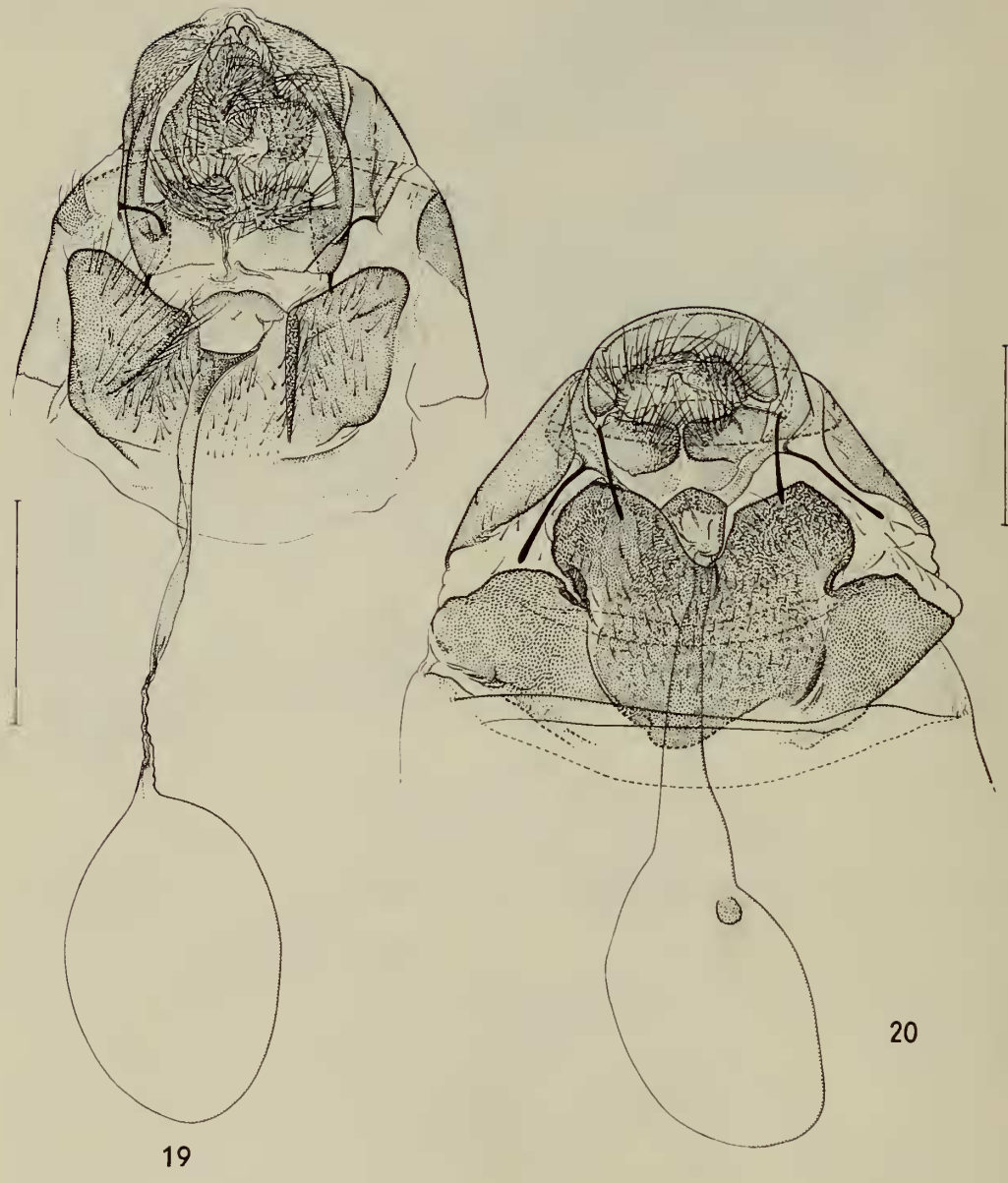
Hybodrepana Bryk, 1943 : 22. Type-species *Hybodrepana grotesca* Bryk, 1943 : 23, by monotypy **syn. n.**

Thymistida appears to be most closely allied to *Agnidra*. Its most distinctive feature is the presence of a short tail on the hind wing (see Plate 1).

Three species are known : *nigritincta* Warren (India, Burma), *tripunctata* Walker (India, Burma, China) and *undilineata* Warren (1923 : 474) (N.E. India). (See Table 1.) The species *nigritincta* together with the sole Chinese representative, *tripunctata*, are dealt with below and the opportunity taken to unravel their synonymy. The latter two species both occur in India and Burma and are similar in colour pattern.



FIGS. 16–18. *Paralbara spicula*, ♂ genitalia. 16, seventh and eighth sternites and eighth tergite ; 17, aedeagus ; 18, ♂.



FIGS. 19, 20. *Paralbara*, ♀ genitalia : 19, *spicula* ; 20, *pallidinota*.

Thymistida nigritincta Warren

(Pl. 1, fig. 300 ; Text-figs. 21–24)

Thymistida nigritincta Warren, 1923 : 474. [Published simultaneously with *rufa* ; here selected as the valid name for this taxon.]
Thymistida nigritincta Warren ; Gaede, 1931 : 39.
Thymistida rufa Warren ; 1923 : 475. **syn. n.**
Hybodrepana grotesca Bryk, 1943 : 23. **syn. n.**

This species can be distinguished from *tripunctata* Walker (q.v.) by the shorter antennal pectinations in the male (longest pectination equal to about three quarters greatest width of eye), the distinctively shaped costa of the fore wing, and by the male and female genitalia.

Distribution. N.E. India and N. Burma.

Types. *nigritincta*. LECTOTYPE ♀, here selected, in the BM(NH), labelled : Khasis, June 1895, Nat. Coll. ; *Thymistida nigritincta* Type ♀ Warr. ; Rothschild Bequest B.M. 1939–1 ; B.M. negative No. 29118.

rufa. LECTOTYPE ♂, here selected, labelled " Khasis ". In the BM(NH).

grotesca. Holotype ♂, N.E. Burma, Kambaiti ; Drepanidae genitalia slide No. 1047 ; in Naturhistoriska Riksmuseet Stockholm.

Thymistida tripunctata Walker

(Pl. 14, figs. 389–392)

Thymistida tripunctata Walker, 1865 : 515.
Thymistida tripunctata Walker ; Warren, 1923 : 474. [Good fig.]
Thymistida tripunctata Walker ; Hampson, [1893] : 343.
Thymistida tripunctata Walker ; Gaede, 1931 : 39.
Erosia cervinaria Moore, 1867 : 646. [Synonymized by Hampson [1893].]
Thymistida nigritincta divisa Bryk, 1943 : 23. **syn. n.**

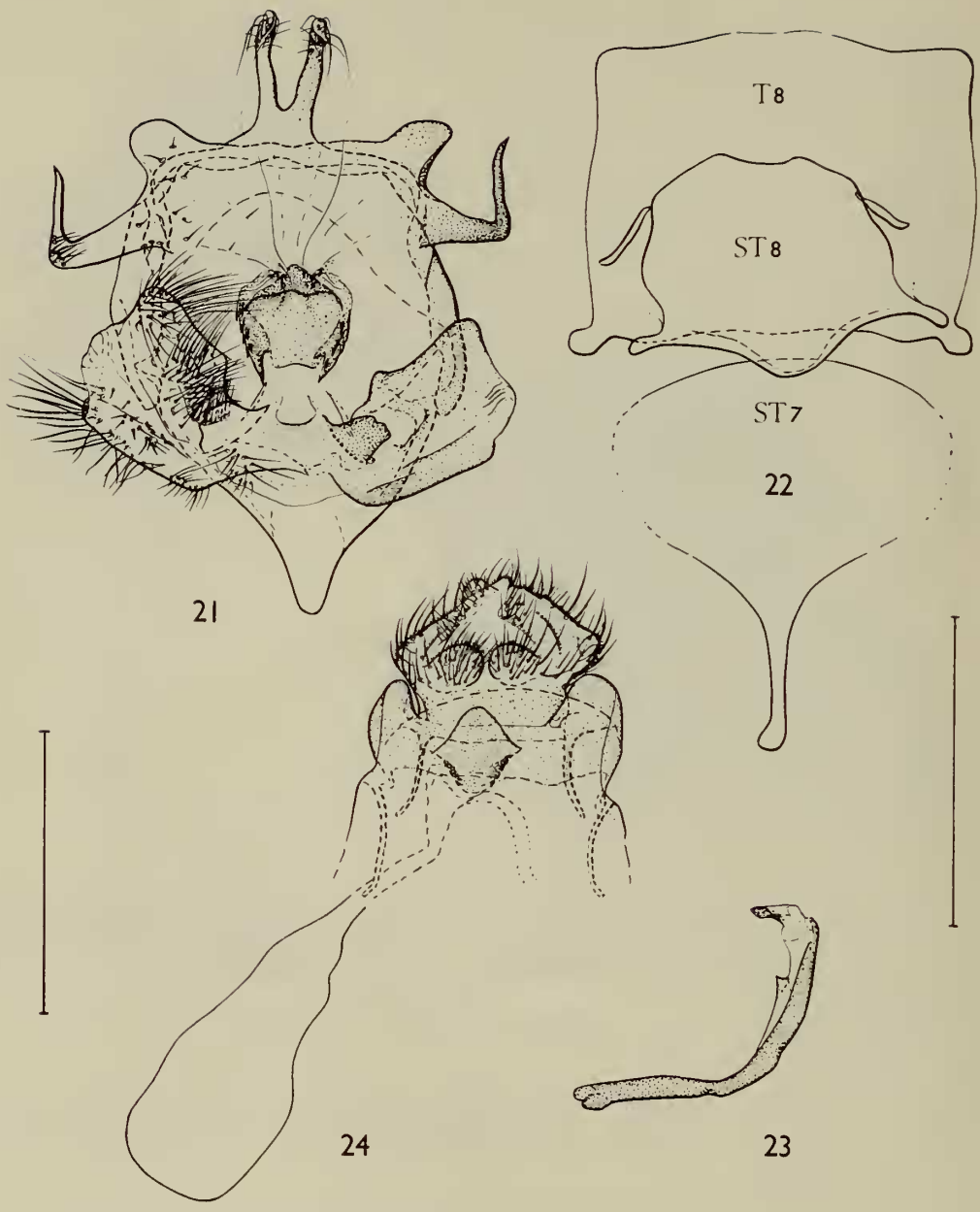
This species is readily separated from the similarly marked *nigritincta* by the much larger antennal pectinations in the male (longest pectination equal to over twice greatest width of eye), the less sinuous costa of the fore wing, and by the male and female genitalia.

Distribution. N.E. India, N. Burma and China (2 ♀, from Siao-Lou, Szechwan, in the BM(NH)).

Types. *tripunctata*. Holotype ♂, labelled ' E. India '. In the BM(NH). The locality is given as ' Hindustan ' in the original description. The abdomen of the holotype is missing.

cervinaria. The syntypes stated to be from Bengal are lost according to Horn and Kahle (1937 : 380), but there is a short series in BM(NH) from the Moore Coll. labelled *cervinaria*.

divisa. Holotype ♀, N.E. Burma, Kambaiti ; Drepanidae genitalia slide No. 1049. In Naturhistoriska Riksmuseet, Stockholm.



FIGS. 21–24. *Thymistida nigritincta*, genitalia. 21, ♂ ; 22, ♂ seventh and eighth sternites, and eighth tergite ; 23, aedeagus ; 24, ♀.

AGNIDRA Moore **gen. rev.**

(Pls. 1, 2, figs. 301–311 ; Text-figs. 25–71)

Agnidra Moore, [1868] : 618. Type-species, here designated, *Fascellina specularia* Walker, 1866 : 1553.

Zanclalbara Inoue, 1962 : 27. Type-species *Drepana scabiosa* Butler, 1877 : 478, by monotypy. **syn. n.**

Albara Walker *sensu* Gaede, 1931 : 31. [*Partim.*]

♂. Palp extends to just above labrum. Antenna bipectinate from base to between one half and four-fifths of its length, except in *fenestra* which has uniserrate ciliate antenna.

Mesothoracic tibia with one pair of spurs, metathoracic tibiae with two pairs of spurs. Prothoracic tibia with well-developed brush-organ in *scabiosa*, *hoenei* and *fuscilinea*.

Vein R_1 in fore wing arises from distal end of cell ; R_2 arises from just distal to end of areole in *fenestra*, otherwise from distal end of areole. In the hind wing $Sc + R_1$ approximates to *Rs* except in *fenestra* in which $Sc + R_1$ anastomoses with *Rs* for some distance distal to end of cell. Upper surface of wings buff, yellowish grey or yellowish brown ; sinuous antemedial fascia simple or double ; discocellular cell-spot and posterior cell-spot usually present ; pale patches at end of cell in some species ; postmedial fascia double, lunulate, sinuous or straight, well-marked in most species ; subterminal fascia double, usually ill-defined except for short distance just before apex. Under surface of wings yellow, buff or yellowish grey ; cell-spots present or absent ; postmedial fascia well-marked in some species, hardly visible in others ; subterminal variously marked.

♂ genitalia : valve elongate in *specularia*, *vinacea* and *corticata*, short in other species, with variously shaped processes or setae at base ; socius well-developed ; diaphragma sclerotized medially ; uncus simple in *vinacea* and *corticata*, absent in *specularia*, bifurcate to varying extent in remaining species ; seventh abdominal sternum modified except in *fenestra*, asymmetric in *corticata francki* ; eighth abdominal tergite emarginate or convex posteriorly ; eighth sternite a narrow transverse plate in *discispilaria*, otherwise elongate, with lateral sclerite on either side except in *fenestra* ; long eversible sac on either side of eighth sternite in *corticata* and *specularia*.

♀. As for male but antennae very weakly uniserrate (all except *fenestra*) or uniserrate and cilate (*fenestra*), apex of fore wing more strongly produced, and prothoracic tibia without brush-organ.

♀ genitalia : signum ovate in *fenestra*, otherwise an elongate band ; eighth abdominal segment and ninth tergum moderately well sclerotized.

Agnidra probably has closest affinities with *Thymistida* Walker and *Betalbara* Matsumura. It can be separated from the latter by the coloration and colour-pattern of the wings in both sexes and by the shape of the seventh and eighth abdominal sternites in the male. (The seventh sternite is unmodified in *fenestra*.) *Agnidra* is readily distinguished from *Thymistida* by the shape of the wings (see Plates).

Ten species are now included in *Agnidra* and are dealt with below. Three of these are new ; two have been transferred from *Drepana* Schrank (*fenestra* and *corticata*), four from *Albara* Walker (*discispilaria*, *fuscilinea*, *specularia*, *vinacea*), and one from the monotypic *Zanclalbara* Inoue (*scabiosa*).

Distribution. Ceylon (*specularia*), N. India (*specularia*, *corticata*, *vinacea*, *discispilaria*), Sikkim (*specularia*), Bhutan (*specularia*) N. Burma (*vinacea*, *specularia*, *fenestra*), Thailand (*discispilaria*), Vietnam (*specularia*), China (*fulvior*, *furva*, *hoenei*, *corticata*, *fenestra*, *scabiosa*), Korea (*scabiosa*), Japan (*scabiosa*) and Malaya (*fuscilinea*).

Seven of the ten species of *Agnidra* are endemic to the Indo-Chinese Subregion, *specularia* is shared between the Indo-Chinese and Indian Subregions, *scabiosa* is shared between the Indo-Chinese Subregion and the Manchurian Subregion, and *fuscilinea* is endemic to the Malayan Subregion. (See Table 1.)

Certain tentative species groupings can be made in this genus : *specularia, vinacea* and *corticata* form one group ; *scabiosa, fuscilinea, fulvior, furva, hoenei,* and probably *discispilaria,* a second group. The latter could be subdivided by extracting *fulvior, furva* and *hoenei* as one unit, *discispilaria* as a second, and *scabiosa* and *fuscilinea* as a third. On the evidence of the total external and genitalic characters studied, the species *fenestra* is probably most satisfactorily placed in *Agnidra* in spite of the venational and antennal difference between it and the rest of the genus.

Key to the species of *AGNIDRA*

Males

1 Antenna uniserrate ; postmedial fascia on upper surface of fore and hind wing straight (Pl. 2, fig. 307) ; $Sc + R_1$ anastomosed with *Rs* distal to cell in hind wing ; 7th sternum of abdomen unmodified . . . . . ***fenestra*** (p. 34)

– Antenna bipectinate ; postmedial fascia on upper surface of fore and hind wings straight, lunulate or sinuous ; $Sc + R_1$ approximated to *Rs* distal to cell in hind wing ; 7th sternum of abdomen modified 2

2 Postmedial fascia on upper surface of fore wing straight or nearly so (e.g. Pl. 1, fig. 305) 3

– Postmedial fascia of upper surface of fore wing lunulate or sinous, not straight . . 5

3 Prothoracic femur with large brush organ. Genitalia : valve not elongate : uncus bifid . . . . . ***fuscilinea*** (p. 44)

– Prothoracic femur without large brush organ. Genitalia : valve elongate ; uncus simple 4

4 Area of pale medial patches on fore wing as in Pl. 1, figs. 303, 304. Genitalia : gnathus not heavily spinose (Text-fig. 50) . . . . . ***corticata*** (p. 39)

– Area of pale medial patches on fore wing as in Pl. 1, fig. 305). Genitalia : gnathus heavily spinose (Text-fig. 52) . . . . . ***vinacea*** (p. 40)

5 Area of pale patches on hind wing as in (Pl. 2, fig. 306). Genitalia : uncus absent (Text-fig. 41) . . . . . ***specularia*** (p. 36)

– Area of pale patches small (e.g. Pl. 2, fig. 309). Genitalia : uncus present . . 6

6 Pale patches on each wing encircled by ring of dark scales (Pl. 2, fig. 308) ***discispilaria*** (p. 44)

– Pale patches on each wing not encircled by ring of dark scales 7

7 Transverse fasciae lunulate on both wings 8

– Transverse fasciae non-lunulate on both wings. (Pl. 1, figs. 301, 302) ***scabiosa*** (p. 42)

8 Prothoracic femur with well-developed brush-organ. Genitalia as in Text-figs. 68–71 ***hoenei*** (p. 31)

– Prothoracic femur without brush-organ. Genitalia not as in *hoenei* . . . 9

9 Fore wing moderately falcate (Pl. 2, fig. 311) ; ground-colour of upper surface brownish buff. Genitalia as in Text-figs. 30–33 . . . . . ***furva*** (p. 33)

– Fore wing weakly falcate (Pl. 2, fig. 310) ; ground-colour of upper surface buff. Genitalia as in Text-figs. 25–28 . . . . . ***fulvior*** (p. 31)

Agnidra hoenei sp. n.

(Pl. 2, fig. 309 ; Text-figs. 29, 68–71)

♂. Vertex of head and base of antenna dark reddish brown ; rest of antenna, front of head and outer surface of palp brownish buff ; antenna bipectinate from base to about four-fifths of its length. Collar yellow.

Thorax and abdomen similar in colour to corresponding surface of wing. Colour-pattern of wings as in Pl. 2, fig. 309. Ground-colour of upper surface of fore wing buff, variable in tone, moderately lustrous ; pale whitish medial patches sometimes strongly irrorate with dark brown ; remaining markings pale purplish brown, except for dark brown edge to medial patches and dark brown anterior markings of subterminal fascia. Ground-colour of hind wing usually slightly paler than fore wing, moderately lustrous ; markings pale purplish brown, except for patch at end of cell (as for fore wing).

Under surface of both wings brownish yellow-orange, slightly lustrous. Both wings with brownish grey subterminal and postmedial fasciae anteriorly, or in some specimens (e.g. holotype) with subterminal moderately well-marked anteriorly but with only a trace of postmedial fascia. Well-marked dark brown discocellular spot on fore wing and smaller faintly marked spot at posterodistal angle of cell ; hind wing with similarly placed but poorly defined cell-spots.

Prothoracic leg with brush-organ ; outer surface of femur, tibia and tarsus dark greyish brown ; legs otherwise as for colour of under surface of wings. Mesothoracic tibia with fringe of long hair-scales on inner surface.

♂ genitalia as in Text-figs. 68–71.

♀. Similar to male but with ciliate, very weakly biserrate antennae, and prothoracic and mesothoracic legs with normal vestiture of scales.

♀ genitalia as in Text-fig. 29.

Wing. ♂ 17·5–20·0 mm. (14) ; ♀ 19·5–21·0 mm. (14).

Closely related to *furva* and *fulvior* but separated from both by the genitalia (especially the aedeagus) and the presence of a brush-organ on the male fore leg, and from *furva* by the coloration, colour-pattern of both wings and the less strongly falcate fore wing.

Distribution. Known only from the type-locality, which is also the only known locality for its closest relative *fulvior*.

Holotype ♂. China : N. Yunnan, Likiang, 8.vi.1934 (*Höne*) ; Drepanidae genitalia slide No. 968. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 14 ♂ and 14 ♀, N. Yunnan, Likiang, 8.vi.34, 2.v–3.x.1935 (*Höne*). *Daniel Collection, Munich.* China : 2 ♂, 1 ♀, N. Yunnan, Likiang, 6.vi, 28.ix.1934, 5.ix.1935 (*Höne*). *BM(NH).* China ; 3 ♂, 1 ♀, N. Yunnan, Likiang, 1.vii–7.ix.1934, 19.ix–3.x.1935 (*Höne*).

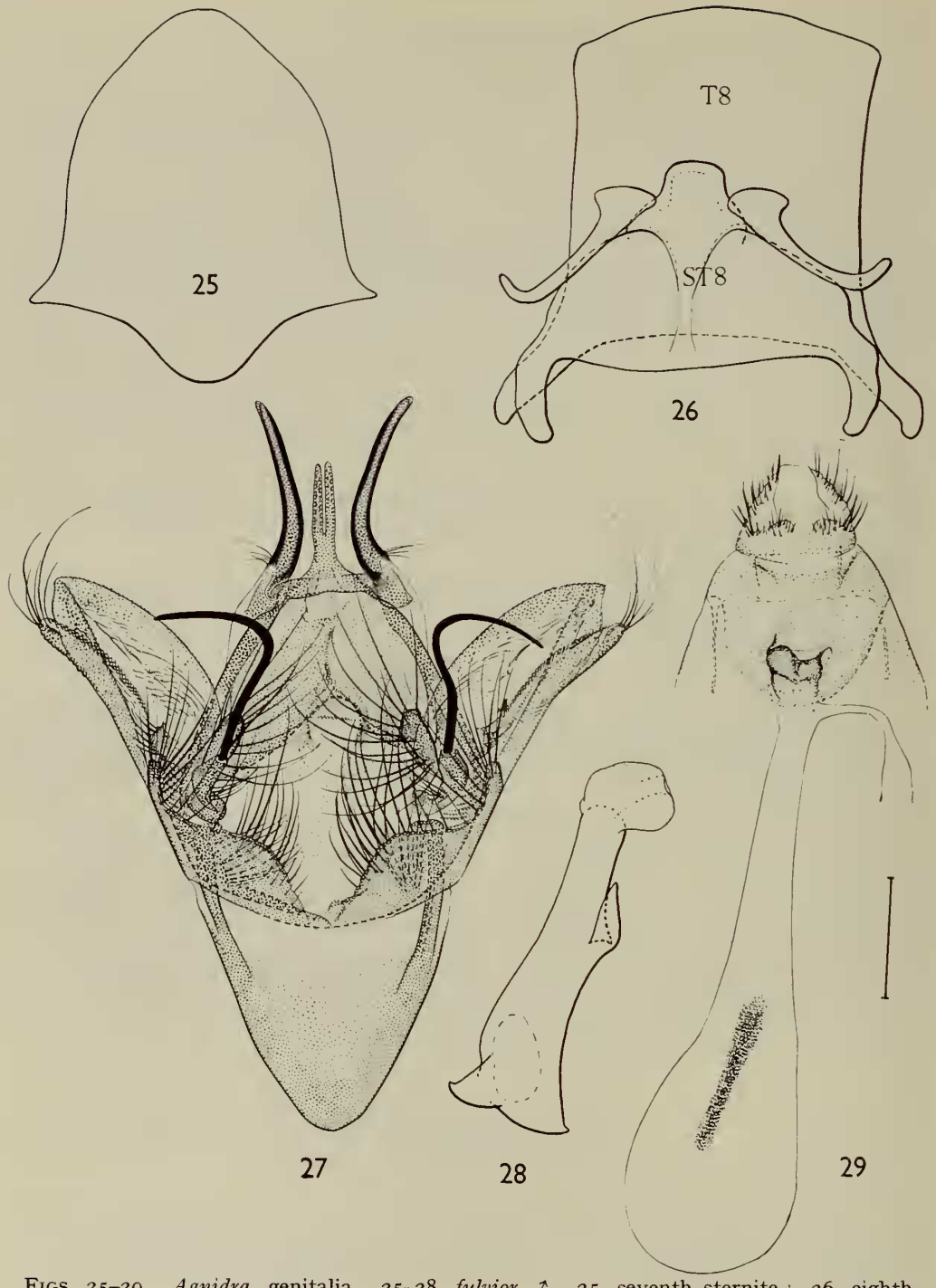
Agnidra fulvior sp. n.

(Pl. 2, fig. 310 ; Text-figs. 25–28, 34)

♂. Whole of head and outer surface of palp dark reddish brown. Antenna greyish brown, darkest at base. Bipectinate from base to four-fifths of its length. Collar light buff.

Thorax and abdomen reddish buff dorsally, pale buff ventrally.

Colour-pattern of upper surface of wings as in Pl. 2, fig. 310 ; coloration as for *hoenei* but with ground-colour of both wings usually duller, more brownish, and with medial patches of



FIGS. 25–29. *Agnidra*, genitalia. 25–28, *fulvior*, ♂. 25, seventh sternite ; 26, eighth tergite and sternite ; 27, ♂ ; 28, aedeagus. 29, *hoenei*, ♀.

fore wing invariably irrorate with brown. Under surface of both wings dull brownish yellow with only cell-spots well-marked ; fasciae similar to *hoenei*, but diffusely marked. Outer surface of fore leg dark brown ; legs otherwise pale buff.

♂ genitalia as in Text-figs. 34a–34d.

♀. Similar to male but with very weakly biserrate, ciliate antenna.

♀ genitalia as in Text-fig. 34.

Wing. ♂ 19·5–20·5 mm. (7) ; ♀ 20·5 (1).

Readily distinguished from the closely related *furva* by the colour-pattern and by the less strongly falcate fore wings ; from *hoenei*, probably its closest ally, by the lack of a brush-organ on the male fore leg ; and from both species by differences in the male genitalia (especially in the aedeagus).

Distribution. Known only from the type locality (China, Yunnan).

Holotype ♂. China : N. Yunnan, Likiang, 22.vi.1935, (*Höne*) ; Drepanidae genitalia slide No. 964. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 3 ♂, 2 ♀, N. Yunnan, Likiang, 22.vi–9.viii.1935 (*Höne*). *Daniel Collection, Munich.* China : 1 ♂, N. Yunnan, Likiang, 3.ix.1935 (*Höne*). *BM(NH).* China : 2 ♂, N. Yunnan, Likiang, 30.vii–7.viii.1935 (*Höne*).

Agnidra furva sp. n.

(Pl. 2, fig. 311 ; Text-figs. 30–33)

♂. Head and outer surface of palp greyish brown. Antenna greyish brown at base, paler distally ; bipectinate from base to four-fifths of its length. Collar brownish white.

Thorax brownish buff dorsally, buff ventrally. Colour-pattern of upper surface of wings as in Pl. 2, fig. 311. Ground-colour of upper surface of fore wing brownish buff ; fasciae greyish brown, anterior part of subterminal fascia very dark brown ; pale brown medial patches irrorate with greyish brown. Hind wing slightly more yellowish buff on upper surface but brownish buff at base and distal to subterminal fascia, colour of markings as on fore wing. Under surface of both wings buff, but greyish brown medially and distally in fore wing and antero-distally in hind wing. Under surface of fore wing with moderately well-marked, greyish brown, double postmedial fascia and trace of subterminal fascia ; well marked, dark brown discocellular spot and similar but smaller spot at posterior angle of cell. Under surface of hind wing similar to fore wing but with discocellular spot smaller than posterior cell-spot. Legs buff but with outer surface of fore leg greyish brown.

Abdomen greyish buff dorsally, paler posteriorly ; buff ventrally.

♂ genitalia as in Text-figs. 30–33.

♀. Not known.

Wing. ♂ 37·0–38·0 mm. (3).

Separated from the closely related *hoenei* and *fulvior* by the more strongly falcate fore wings, the brownish buff ground-colour of the wings, the more strongly marked postmedial fascia on the upper surface of both wings and by the male genitalia (particularly the aedeagus).

Holotype ♂. China : Tsékou, 1900 (*Dubernard*) ; Drepanidae genitalia slide No. 966. In the BM(NH).

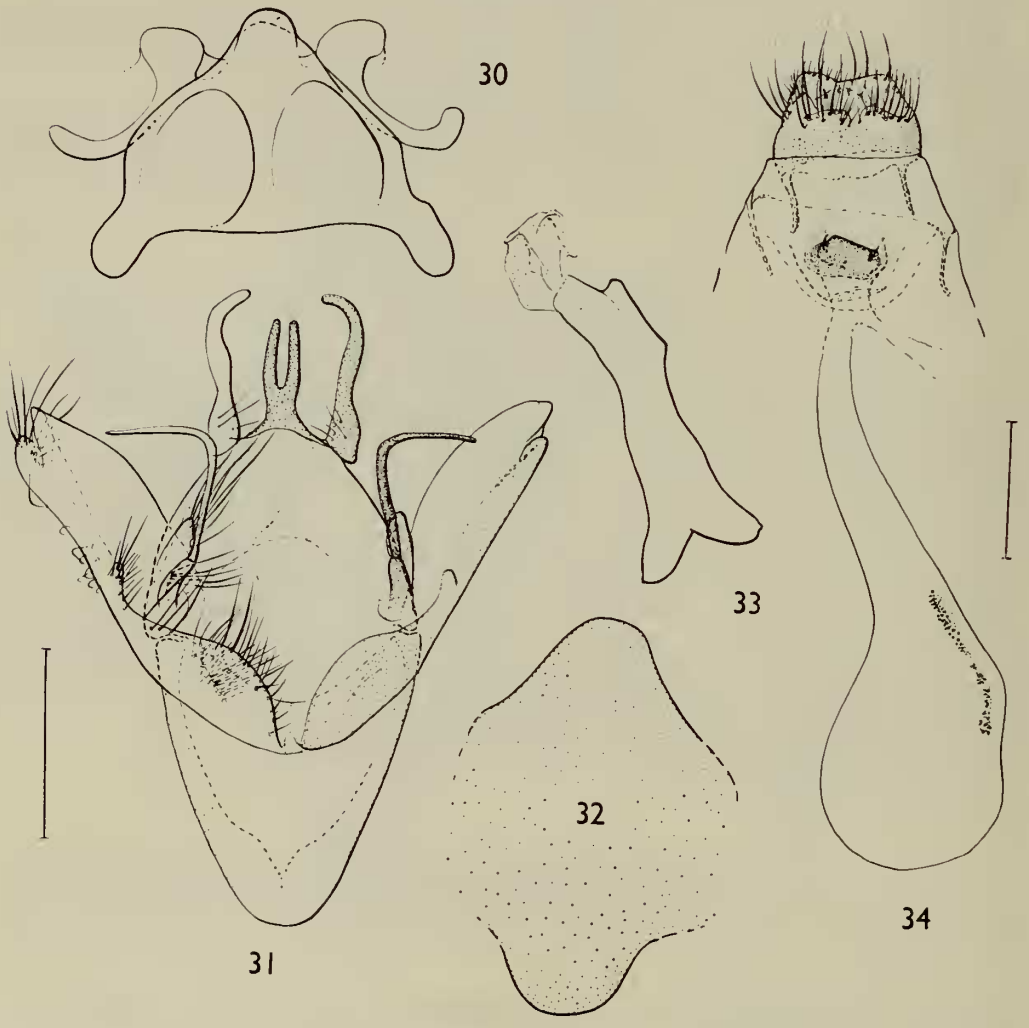
Paratypes. *BM(NH).* China : 2 ♂, N. Yunnan, Tsékou, 1898–1900 (*Dubernard*).

Agnidra fenestra (Leech) **comb. n.**

(Pl. 2, fig. 307 ; Text-figs. 35–38)

Drepana fenestra Leech, 1898 : 368.
Drepana fenestra Leech ; Strand, 1911 : 202. [Good fig.]
Drepana fenestra Leech ; Gaede, 1931 : 26.

In contrast to each of the remaining species of the genus, *fenestra* has uniserrate antennae in both sexes, R_2 of the fore wing arises from just distal to the end of the areole, and in the hind wing $Sc + R_1$ anastomoses with *Rs* for some distance distal to the end of the cell. The male genitalia differ in possessing an unmodified seventh

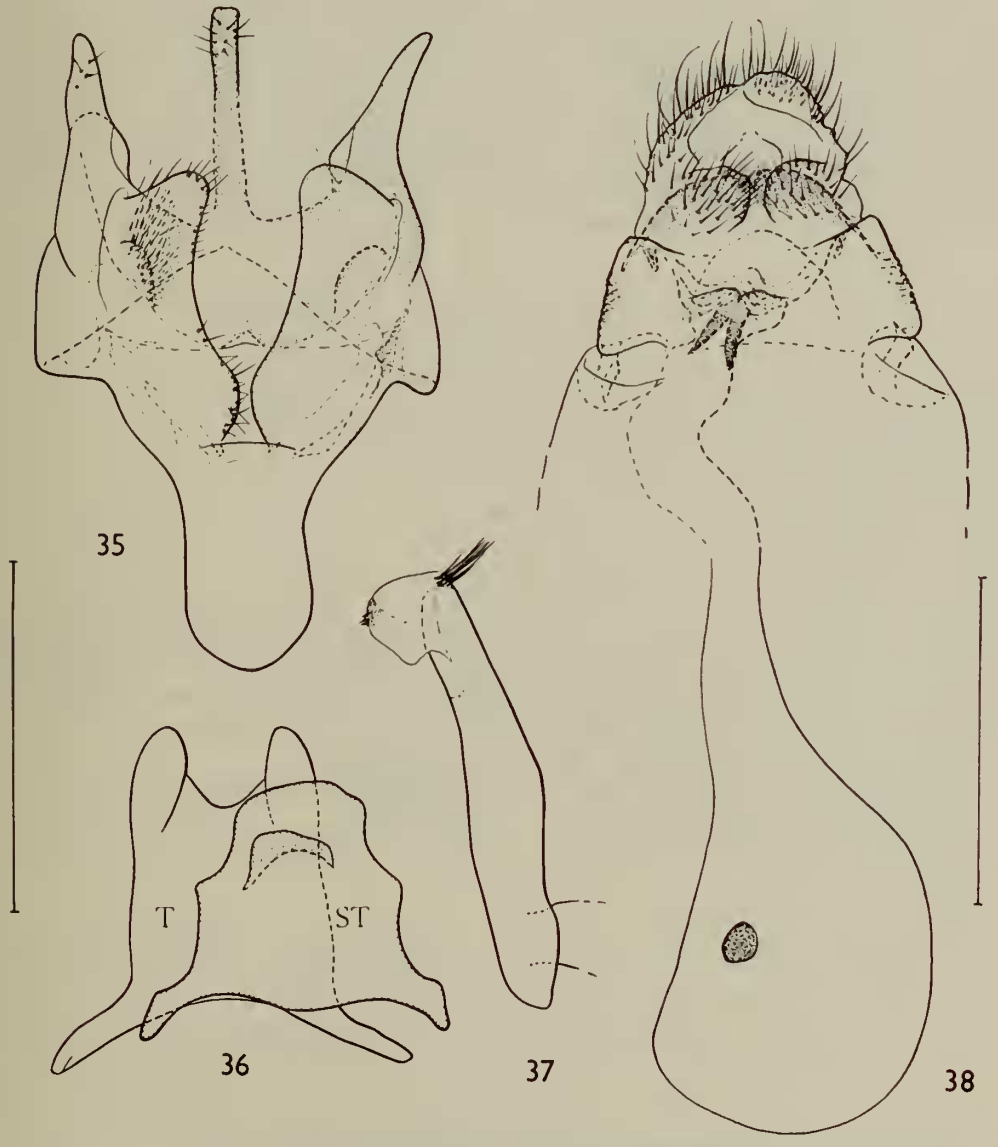


FIGS. 30–34. *Agnidra*, genitalia. 30–33, *furva*. 30, ♂ eighth sternite ; 31, ♂ ; 32, ♂ seventh sternite ; 33, aedeagus. 34, *fulvior*, ♀.

abdominal sternum. In coloration and colour-pattern *fenestra* resembles a small *corticata* or *vinacea*, but is easily distinguished by the translucent patches at the distal end of the cell and by the well-defined confluent postmedial fascia on the upper surface of the fore and hind wing.

Wing. ♂ 12·0–14·0 mm. (10) ; ♀ 13·0–15·5 mm. (6).

Distribution. N. E. Burma, China (Szechwan, Yunnan, Shensi).



FIGS. 35–38. *Agnidra fenestra*, genitalia. 35, ♂ ; 36, ♂ eighth tergite and sternite ; 37, aedeagus ; 38, ♀.

Material examined. Type. I select as LECTOTYPE a ♂ from the syntypic series of two males and one female in the BM(NH), labelled : Wa-Shan [China, Szechwan], 6000 ft. *A. E. Pratt* coll. May 1889 ; Leech Coll. 1900–64 ; *Drepana fenestra* sp. n. Type ♂ ; Drepanidae genitalia slide No. 803.

Paralectotypes. *BM(NH)*. China : 1 ♂, 1 ♀, [Szechwan], Wa-shan, 6000 ft., v.1889 (*Pratt*).

Other material. *BM(NH)*. China : 1 ♂ [Szechwan], Frontière orientale, Tibet, 1905 (*Déjean*) ; 1 ♂, S. Shensi, Tsinling, Tapaishan, 23.vi.1935 (*Höne*) ; 1 ♂, N. Yunnan, Likiang, 2.vii.1934 (*Höne*). Burma : 1 ♂, Kambaiti, 7000 ft., 15.vi.1934 (*Höne*). *Naturhistorisches Museum, Vienna.* China : 1 ♂, Szechwan, Ta-tsien-lou, 1910 (Chasseurs indigènes). *Museum Koenig, Bonn.* China : 7 ex., N. Yunnan, Likiang (*Höne*) ; 2 ex., N. Yunnan, A-tun-tse (*Höne*) ; 13 ex., S. Shensi, Tsinling, Tapaishan (*Höne*). *U.S. National Museum.* China : 1 ♂, Szechwan, Beh Luh Din (30 miles N. of Chengtu) (*Graham*).

Agnidra specularia (Walker) **comb. rev.**

(Pl. 2, fig. 306 ; Text-figs. 39–43)

Fascellina specularia Walker, 1866 : 1553.
Agnidra specularia (Walker) Moore, [1868] : 618. [Fig.]
Agnidra specularia (Walker) ; Butler, 1886 : 17. [Figs.]
Drepana specularia (Walker) Hampson, [1893] : 335.
Drepana specularia (Walker) ; Strand, 1911 : 202. [Fig.]
Albara specularia (Walker) Swinhoe, 1892 : 242.
Albara specularia (Walker) ; Gaede, 1931 : 33.
Albara ochracina Bryk, 1943 : 17. [Fig.] **syn. n.**

Distinguished from the rest of the genus, including its close allies *vinacea* and *corticata*, by the large sparsely scaled patches on both wings (see Plate), and in the male genitalia (Text-figs. 40–43) by the absence of an uncus, the shape of the eighth sternite and the presence of a robust two-spined process at the base of the valve.

Wing. ♂ 19·0–22·5 mm. (33) ; ♀ 24·0–25·5 mm. (10).

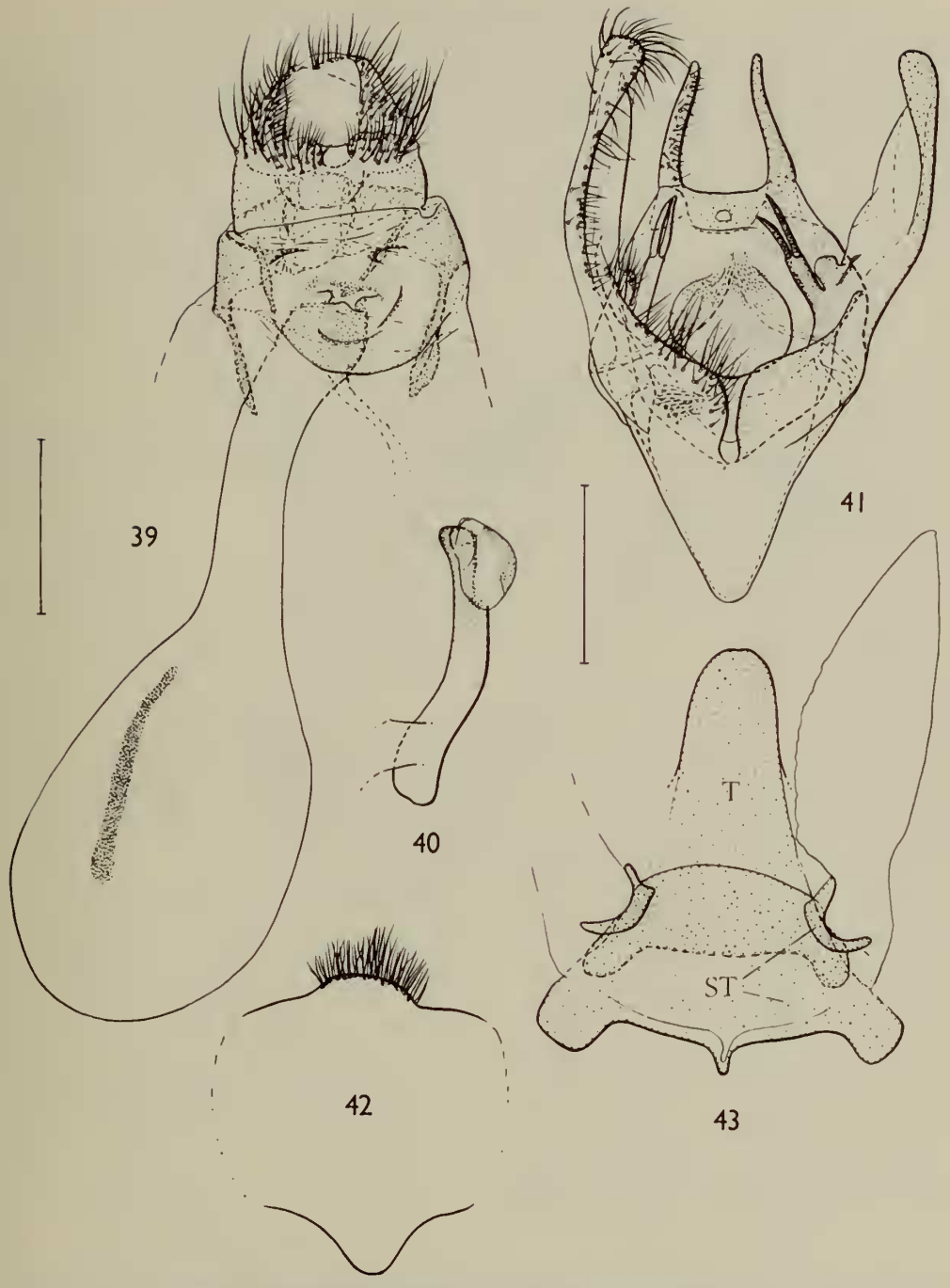
This species, as in *scabiosa*, *hoenei* and *fuscilinea*, has a brush-organ on the femur of the prothoracic leg in the male.

Distribution. N.E. India (Darjeeling, Khasia Hills), Sikkim, Bhutan, Ceylon and Vietnam.

Material examined. Types. *specularia*. Walker (1866 : 1553) described this species from a single male specimen from ' North Hindostan ' in the collection of A. E. Russell. The Russell collection is stated to be lost by Horn and Kahle (1937 : 380) and no trace of this collection has been found by the present author. I therefore select as NEOTYPE a male in the BM(NH) labelled : Darjeeling, 4 August, 1886. *H. J. Elwes* ; Coll. H. J. Elwes ; Rothschild Bequest 1939–1.

ochracina. Holotype ♂, N. E. Burma, Kambaiti, 2000 m. ; Drepanidae genitalia slide No. 792 ; in the Naturhistoriska Riksmuseet, Stockholm.

Other material. *BM(NH)*. India : 8 ♂, 4 ♀, Darjeeling (*Elwes, Möller, Pilcher*) ;



FIGS. 39–43. *Agnidra specularia*, genitalia. 39, ♀ ; 40, aedeagus ; 41, ♂ ; 42, ♂ seventh sternite ; 43, ♂ eighth tergite, and eighth sternite showing right lateral sac.

4 ♂, 1 ♀, Khasis ; 1 ♂, Assam, Cherrapunji. SIKKIM : 11 ♂, 2 ♀, 7000–10,000 ft., viii.1886, 23.iv–ix.1889, viii.1909 (*Möller, Elwes, Pilcher*). BHUTAN : 1 ♂, 2 ♀. CEYLON : 3 ♂, 1 ♀, Haputale. *Daniel Collection, Munich.* There is a single male from Vietnam (Tonking) which may prove to represent a new subspecies of *specularia*.

FIGS. 44–48. *Agnidra corticata corticata*, genitalia. 44, ♀ ; 45, ♂ ; 46, aedeagus ; 47, ♂ seventh sternite ; 48, ♂ eighth tergite and sternite.

Agnidra corticata (Warren) **comb. n.**

(Pl. 1, figs. 303, 304 ; Text-figs. 44–51)

Drepana corticata Warren, 1922 : 464. [Good fig.]

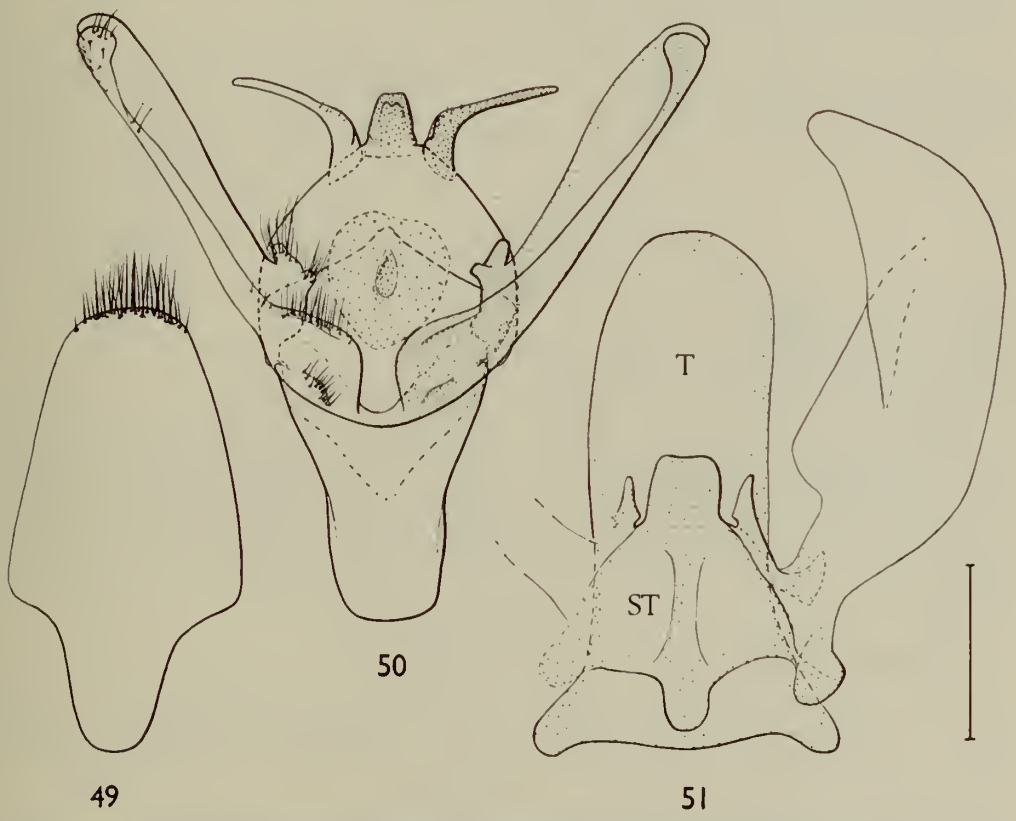
Separable from the closely allied *vinacea*, and from *fuscilinea* which it resembles externally, by the much smaller area of pale patches at the end of the cell on the fore wing. These patches are pale buff; not sparsely scaled as in *specularia*, another closely allied species. The male and female genitalia are also diagnostic, particularly the short uncus.

Two subspecies are known : the nominate subspecies (N.E. India), and *francki* (China).

Agnidra corticata corticata (Warren)

(Pl. 1, fig. 304 ; Text-figs. 44–48)

Drepana corticata Warren ; Gaede, 1931 : 26.



FIGS. 49–51. *Agnidra corticata francki*, ♂ genitalia ; 49, seventh sternite ; 50, ♂ ; 51, eighth tergite, and eighth sternite showing right lateral sac.

Distinguished from *francki* by difference in the shape of the pale patches on the upper surface of the fore and hind wings (see Plate) and by the male genitalia, in particular the seventh and eighth abdominal tergites.

Wing. ♂ 15·5 mm. (1) ; ♀ 17·5 mm. (1).

The specimen illustrated in Pl. 1, fig. 304 (a female from the Khasia Hills in Assam) is the only known specimen apart from the holotype.

Material examined. Type. Holotype ♂, Darjeeling, (*Möller*) ; Drepanidae genitalia slide No. 738. In the BM(NH).

Other material. *BM(NH)*. India : 1 ♀, Khasis, vi.1895 (Nat. Coll.).

Agnidra corticata francki ssp. n.

(Pl. 1, fig. 303 ; Text-figs. 49–51)

Similar to the nominate subspecies in both sexes, but with the pale medial patches on the fore wing only faintly marked and the medial shade on the hind wing narrower. The male genitalia (Text-figs. 49–51) differ from those of the nominate subspecies, particularly in the shape of the seventh and eighth abdominal sternites.

Wing. ♂ 18·5 mm. (1) ; ♀ 19·0 mm. (1).

Holotype ♂. China : Kwanhsien, 10.vii.1926 (*Franck*) ; Drepanidae genitalia slide No. 799. In the BM(NH).

Paratype. *BM(NH)*. China : 1 ♀, Szechwan, Kwanhsien, 24.vii.1926 (*Franck*).

Agnidra vinacea (Moore) comb. n.

(Pl. 1, fig. 305 ; Text-figs. 52–56)

Drepana vinacea Moore ; 1879 : 85.
Albara vinacea (Moore) Warren, 1922 : 468. [Good fig.]
Albara vinacea (Moore) ; Watson, 1961 : 326.
Albara birmanica Bryk, 1943 : 18. [Good fig.] [Synonymized by Watson, 1961 : 326.]

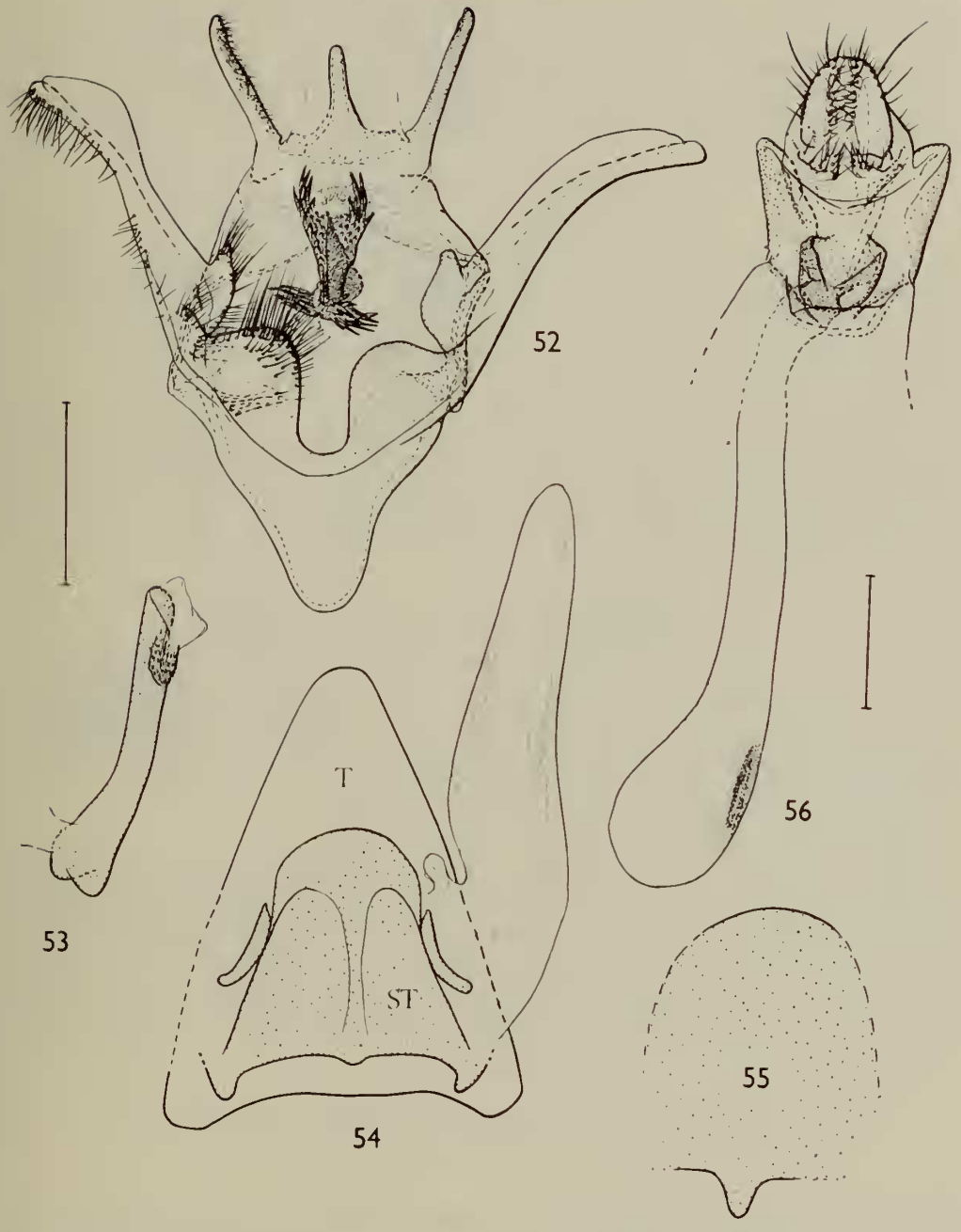
Distinguished from *fuscilinea*, which *vinacea* most closely approaches externally, by the colour-pattern (see Watson, 1961 : 326) and by the male genitalia (particularly the heavily spinose gnathus). The species *specularia* and *corticata* are also close allies of *vinacea* but are easily distinguished from it by differences in the colour-pattern (see fig. in Warren, 1922) and by the genitalia of both sexes (Text-figs. 52–56).

Wing. ♂ 17·5–21·0 mm. (27) ; ♀ 19·5–23·5 mm. (10).

Distribution. Sikkim, N.E. India, N.E. Burma.

Material examined. Types. *vinacea*. A lectotype was selected by the present author (Watson, 1961) from syntypic material (two examples in the BM(NH) and four examples in the Zool. Museum, Berlin). Lectotype ♂, Darjeeling, 1864 ; Drepanidae genitalia slide No. 724 ; in the BM(NH).

birmanica. Holotype ♂, N.E. Burma, Kambaiti, 2000 m.; Drepanidae genitalia slide No. 725 ; in the Naturhistoriska Riksmuseet, Stockholm.



FIGS. 52–56. *Agnidra vinacea*, genitalia. 52, ♂ ; 53, aedeagus ; 54, ♂ eighth tergite and sternite showing right lateral sac ; 55, ♂ seventh sternite ; 56, ♀.

Other material. *BM(NH)*. India : 5 ♂, 3 ♀, Darjeeling, 20.vii.1886, v,vi.1889 (*Möller, Elwes*) ; 3 ♂, 1 ♀, Darjeeling, Gopaldhara, vi.1918, 3400–5800 ft. (*Stevens*, Nat. Coll.) ; 10 ♂, 3 ♀, Khasis, xi.1894, iv., vi.1895 ; 2 ♂, Naga Hills, 5000–8000 ft., vii,viii.1889 (*Doherty*). Sikkim : 2 ♂, 1 ♀, Pedong (*Desgodins*) ; 4 ♂, 3 ♀, 7000 ft., 20.xi.1889, vii,ix.1909 (*Möller, Pilcher*). Burma : 2 ♂, N.E. Burma, Kambaiti, 7000 ft., 1.iv., 15.v.1934 (*Malaise*).

Agnidra scabiosa (Butler) **comb. n.**

(Pl. 1, figs. 301, 302 ; Text-figs. 57–63)

Drepana scabiosa Butler, 1877 : 478.
Drepana scabiosa Butler ; Strand, 1911 : 20.
Drepana scabiosa Butler ; Gaede, 1931 : 27.
Albara scabiosa (Butler) Bryk, 1949 : 27.
Albara scabiosa (Butler) ; Inoue, 1956 : 369.
Zanclalbara scabiosa (Butler) Inoue, 1962 : 27. [Good figs.]

Distinguished from *fuscilinea*, probably its closest ally, and from the rest of the genus by the distinctive colour-pattern of the wings (see Inoue, 1962) and in the male genitalia by the shape of the gnathus, socii and uncus.

Two subspecies are known : the nominate subspecies (S.E. Russia and Japan) and *fixseni* (China and Korea).

Agnidra scabiosa scabiosa (Butler)

(Pl. 1, fig. 301 ; Text-figs. 57–59)

Albara scabiosa (Butler) ; Inoue, 1956 : 368. [*Partim.*] [Good figs.]

Separated from *fixseni* by the narrow, usually poorly marked, proximal subterminal line and by the male genitalia (see *fixseni*).

Wing. ♂ 14·0–17·5 mm. (40) ; ♀ 17·5–20·0 mm. (3).

Distribution. Japan (see Inoue, 1956, 1962) and S.E. Russia.

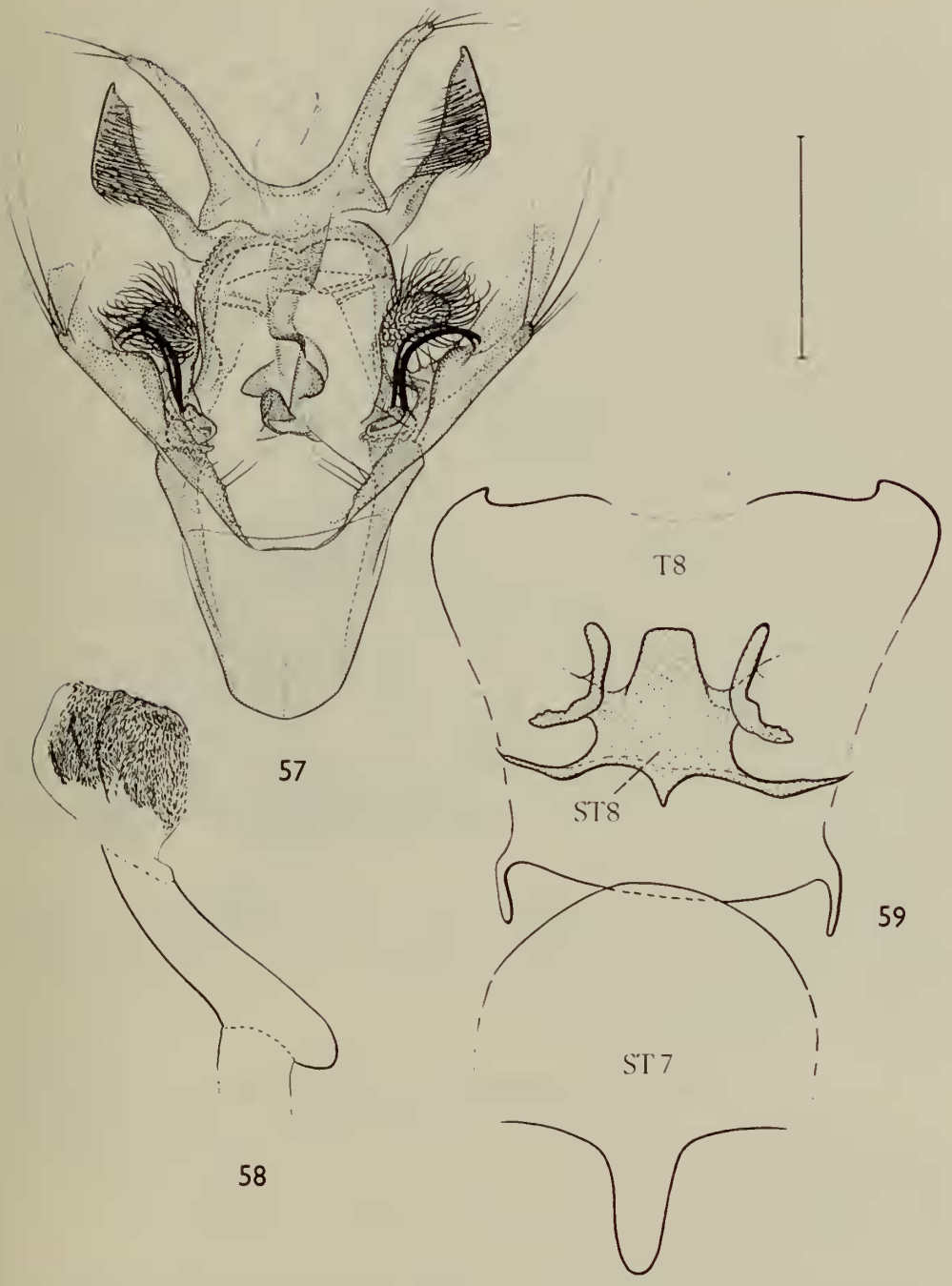
Type. I select as LECTOTYPE a ♀ syntype labelled : 77.9 Japan ; *Drepana scabiosa* Butler Type. This is one of a pair of syntypes, which according to the registration details recorded in the Department of Entomology, BM(NH) (Registration No. 1877–9), were collected by F. M. Jonas in Yokohama (Japan). The type-locality given by Butler in the original description is ' Yokohoma (Jonas) ', which confirms the supposition that the present lectotype and paralectotype (labelled 77.9 Japan) form part or whole of Butler's original material.

Agnidra scabiosa fixseni (Bryk) **ssp. rev., comb. n.**

(Pl. 1, fig. 302 ; Text-figs. 60–63)

Albara scabiosa fixseni Bryk, 1949 : 27.
Albara scabiosa (Butler) ; Inoue, 1956 : 368. [*Partim.*] [Synonymy of *fixseni* with *scabiosa*.]
Drepana scabiosa (Butler); Fixsen, 1887 : 347.

Most specimens of *fixseni* can be distinguished from the nominate subspecies by



FIGS. 57–59. *Agnidra scabiosa scabiosa*, ♂ genitalia. 57, ♂ ; 58, aedeagus ; 59, seventh and eighth sternites, and eighth tergite.

the broad, strongly marked, proximal subterminal line between Cu_{1a} and M_2 on the fore wing. In the male genitalia the characteristic shape of the seventh abdominal sternite, which can be seen without dissection, and structural differences in the diaphragma, eighth sternite and aedeagus (Text-figs. 61–63) separate the two subspecies.

Wing. ♂ 15·5–17·0 mm. (10) : ♀ 17·5–19·0 mm. (5).

Distribution. Korea, China (Manchuria, Chekiang, Hunan, Hupeh, Kiangsu).

Material examined. Type. Holotype ♂, Korea, Kariuzawa ; Drepanidae genitalia slide No. 719. In the Naturhistoriska Riksmuseet, Stockholm.

Other material. *BM(NH)*. KOREA : 2 ♂, Gensan, vii.1887 (*Leech*). 7 ♂, Seoul, Chungyangri, 13.vii.1956, 8.v.–12.viii.1960 (*Pak*) ; 1 ♀, Ori Dong, 1–7.ix.1953 (*Thompson*). CHINA : 1 ♂, 1 ♀, Chekiang, West Tien-mu-shan, 1600 m., 3.vii.1932, 28.ix.1933 (*Höne*) ; 1 ♂, Chekiang, Mokanshan, 28.viii.1930 (*Höne*) ; 3 ♂, 1 ♀, [Hupeh], Changyang, vi,viii.1888 (*Pratt*) ; 1 ♂, [Kiangsu], Nanking, Lungtan, Berg Pao-Hwa, iv ; 2 ♂, 1 ♀, Hunan, Hoeng-shan, 900 m., 9.v.–26.vi.1933 (*Höne*). *Museum Koenig, Bonn*. CHINA : 6 ex., Hunan (*Höne*) ; 21 ex., Chekiang (*Höne*).

Agnidra fuscilinea (Watson) **comb. n.**

Albara fuscilinea Watson, 1961 : 326. [Figs., including genitalia.]

The male genitalia of this species (see Watson, 1961) indicate possible close relationships with *scabiosa*. It is easily separable from *scabiosa* by the colour-pattern of the wings and by several differences in the male genitalia. Externally, *fuscilinea* is closest to *vinacea*, from which it differs by the dark-edged patches on the upper surface of the wings and by the presence on the under surface of the hind wing of a conspicuous, dark brown postmedial fascia and a large brown patch at the distal end of the cell.

Wing. ♂ 20·5–21·0 mm. (2).

Distribution. Malaya, and probably Sumatra (1 ♀ in the Ent. Lab., Wageningen).

Material examined. Type. Holotype ♂, Malaya, Selangor, Bukit Kutu, 8,500 ft., 22.iii.1931 (*Pendlebury*). Drepanidae genitalia slide No. 891. In the BM(NH).

Other material. (See Watson, 1961.)

Agnidra discispilaria Moore **comb. rev.**

(Pl. 2, fig. 308 ; Text-figs. 64–67)

Agnidra discispilaria Moore, 1867 : 619.
Albara discispilaria (Moore) ; Swinhoe, 1892 : 242.
Albara discispilaria (Moore) ; Warren, 1922 : 467. [Fig. (as ' *discipilaria* ').]
Albara discispilaria (Moore) ; Gaede, 1931 : 31.
Drepana discispilaria (Moore) Hampson, [1893] : 336.
Agnidra usta Butler, 1886 : 17. [Synonymized with *discispilaria* by Warren, 1922 : 467.]
Albara magnidiscata Warren, 1922 [German edition] : 468. [Fig.] [Selected by Gaede, 1931 : 32, from a multiple original spelling.] **syn. n.**

FIGS. 60–63. *Agnidra scabiosa fixseni*, genitalia. 60, ♀; 61, ♂; 62, aedeagus; 63, ♂ seventh and eighth sternite, and eighth tergite.

Albara ' magnadiscata ' ; Warren, 1922 [English edition] : 468. [Incorrect original spelling (see above).]
Albara discispilaria macularis Bryk, 1943 : 18. [Good fig.] **syn. n.**

The affinities of this species are doubtful, but similarities in the male genitalia suggest that *scabiosa* and *fuscilinea* are its closest allies. The colour-pattern of both sexes and the extremely large gnathus in the male genitalia are highly diagnostic.

Seven of the twenty-five examined specimens of this species match the lectotype of *magnidiscata* and the holotype of *macularis* in that the dark-edged grey patch at the distal end of the cell on the fore wing is distinctly larger (about 2 mm. in diameter) than in the neotype of *discispilaria* (just over 1 mm. in diameter). Where pin-label data was available, it was found that the large-spotted specimens (these are also lighter in coloration) were taken in April, whereas the small-spotted specimens were taken in June, July or August.

Wing. ♂ 19·0–23·0 mm. (14) ; ♀ 21·5–22·5 mm. (6).

Distribution. N.E. India, Sikkim, and Thailand (1 ♀ in the B.M.(NH)).

Material examined. Types. *discispilaria.* The male type material of *discispilaria* cited originally as from ' Bengal, in Coll. A. E. Russell ' is apparently lost, together with the rest of the Russell collection (see Horn and Kahle, 1937 : 380). No trace of this material can be found in the BM(NH) nor in several other European Museums which have been consulted. I therefore select as NEOTYPE a ♂ in the BM(NH) labelled : 7.86 Darjeeling. H. J. E. ; Coll. H. J. Elwes ; *Albara discispilaria* ♂ Moore ; Rothschild Bequest B. M. 1939–1.

usta. LECTOTYPE ♂, in the BM(NH), here selected labelled : Darjiling 79.57 [ex Lidderdale coll.] ; *Agnidra usta* Butler.

magnidiscata. LECTOTYPE ♂, in the BM(NH), here selected, labelled : Darjeeling (Pilcher) ; 18.3.89 ; *Albara magnidiscata* Type ♂ Warr. [in Warren's handwriting] ; Rothschild Bequest B. M. 1939–1 ; Drepanidae genitalia slide No. 728.

macularis. Holotype ♂, N.E. Burma, Kambaiti, 7000 ft. ; Drepanidae genitalia slide No. 727 ; in the Naturhistoriska Riksmuseet, Stockholm.

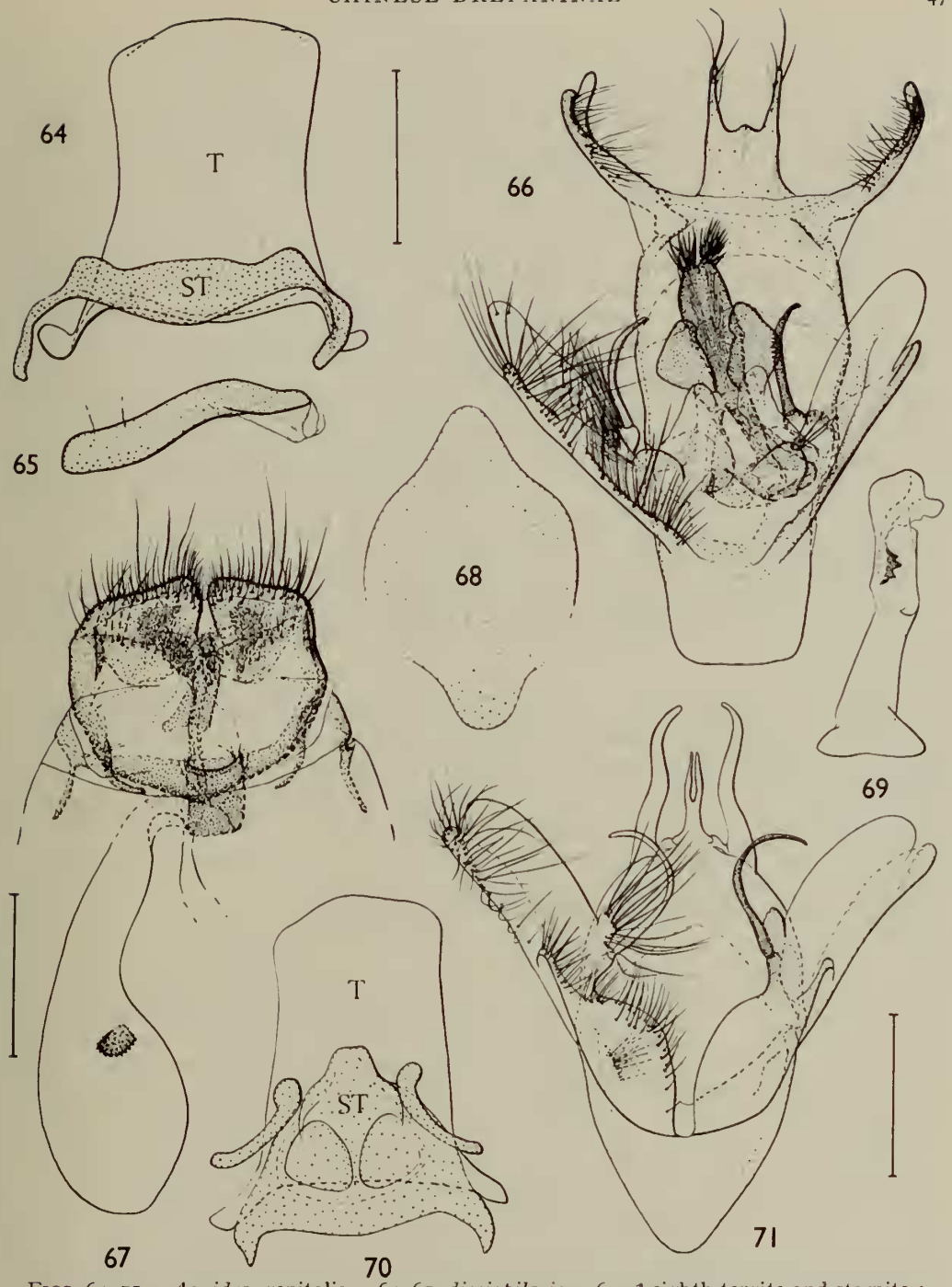
Other material. *BM(NH).* India : 4 ♂, 1 ♀, Darjeeling (*Möller, Lidderdale*) ; 1 ♂, 2 ♀, Darjeeling, Gopaldhara, 4720 ft., 3440–5800 ft., vii.1918 (*Stevens*) ; 1 ♂, Khasis, ii.1896 (Nat. Coll.). Sikkim : 10 ♂, 6 ♀, 6.vi.1888, 14.iv.–14.viii.1889, vi–viii.1909 (*Pilcher, Möller*). Thailand : 1 ♀, Chiengmai Mt., 5800 ft., 19.iii.1928 (*McKean*).

BETALBARA Matsumura

(Pls. 2, 3, figs. 312–319 ; Text-figs. 72–117)

Betalbara Matsumura, 1927 : 47. Type-species *Drepana manleyi* Leech, 1898 : 366, by original designation.
Betalbara Matsumura ; Inoue, 1962 : 23.
Microblepsis Warren, 1922 : 461. Type-species *Problepsis cupreogrisea* Hampson, 1895 : 288, by monotypy. **syn. n.**

♂. Palp extends to just above labrum. Antenna strongly bipectinate in most species but weakly bipectinate in *acuminata* and *robusta* and lamellate in *manleyi*.



FIGS. 64–71. *Agnidra*, genitalia. 64–67, *discispilaria*. 64, ♂ eighth tergite and sternite ; 65, aedeagus ; 66, ♂ ; 67, ♀. 68–71, *hoenei*, ♂. 68, seventh sternite ; 69, aedeagus ; 70, eighth tergite and sternite ; 71, ♂.

Thorax and abdomen similar in colour to adjacent surface of wing. Upper surface of wings pale buff in *manleyi*, yellowish white in *acuminata* and grey or brownish grey in remaining species. R_1 in fore wing arises from areole in *prunicolor*, from near end of cell in rest of genus ; *Rs* arises from areole. Antemedial fascia of fore wing absent only in *leucosticta*, postmedial fascia oblique, strongly marked ; subterminal fasciae absent in *violacea*, broad and diffusely marked in *robusta*, narrow and weakly marked in rest of genus. $Sc + R_1$ approximates to *Rs* distal to end of cell in hind wing. Antemedial fascia and strongly marked postmedial fascia present on hind wing except in *robusta* ; weakly marked subterminal fascia present. Under surface of wings dull white in *acuminata*, pale brownish yellow in *manleyi*, buff in *robusta*, and yellow, brownish grey or neutral grey in remaining species. Under surface of both wings unmarked in *robusta* ; with postmedial and subterminal fasciae in *manleyi* and *acuminata*, but with only diffusely marked postmedial fascia in the other five species. Mid tibia with one pair of spurs in *violacea*, but with two pairs in rest of genus. Hind tibia with two pairs of spurs.

♂ genitalia : saccus with medial dorsal process in *rectilinea* and *rugosa* and with long lateral processes in *flavilinea* ; valve small, with processes at base ; socius simple or with processes ; diaphragma with medial sclerotization, best developed in *flavilinea* ; uncus bifurcate in *manleyi* and *acuminata*, absent in *violacea*, bifid in rest of genus ; aedeagus variously shaped and ornamented ; seventh abdominal sternite with two lateral anterior apodemes in *violacea*, otherwise with single medial apodeme ; eighth tergite truncate or concave posteriorly ; eighth sternite variously shaped, with lateral sclerite on either side in *violacea* and *robusta* and with pair of long eversible setose sacs in *violacea*.

♀. As for male but with apex of fore wing slightly more strongly produced, and antennae very weakly biserrate or uniserrate except in *leucosticta* which has weakly bipectinate antennae.

♀ genitalia : signum an elongate band in *robusta*, absent in *manleyi*, *flavilinea*, *cupreogrisea* and *leucosticta*, ovate in remaining species ; eighth and ninth segments variously sclerotized, without processes.

Included in this revision are *manleyi* and *acuminata*, listed by Inoue (1962) ; *prunicolor*, *flavilinea*, *leucosticta* and *violacea*, transferred from *Albara* Walker ; *robusta*, transferred from *Drepana* Schrank, *cupreogrisea* transferred from *Microblepsis* ; and two new species, *rectilinea* and *rugosa*. The classification of *violacea* and, in particular, *robusta* in *Betalbara* is tentative, but I believe that there are sufficient similarities between them and the rest of the genus to justify their inclusion.

Betalbara is probably most closely related to *Albara*. It can be distinguished externally from *Albara* by the continuous subterminal fascia on the fore and hind wing, or by its absence, whereas in *Albara* this fascia is represented by a series of spots. In the male genitalia the uncus is not massive and bifid as in *Albara*, and the seventh sternite is symmetrical in contrast with the strongly asymetric seventh sternite of *Albara*. The females of *Betalbara* lack the flattened, paired, dorsal lobes of the ninth segment found in *Albara*. The species of *Pseudalbara* differ in the presence of a vestigial frenulum in the male and the absence of pattern on the upper surface of the hind wing.

Distribution. N. India (*prunicolor*, *rugosa*, *leucosticta*, *cupreogrisea*, *violacea*) ; Sikkim (*prunicolor*, *leucosticta*) ; Burma (*prunicolor*, *cupreogrisea*) ; China (*manleyi*, *acuminata*, *prunicolor*, *leucosticta*, *flavilinea*, *rectilinea*, *violacea*, *robusta*) ; Formosa (*violacea*) ; Japan (*manleyi*, *acuminata*) ; Malaya (*leucosticta*, *rugosa*). Six species are Indo-Chinese endemics, two are shared between the Indo-Chinese and Malayan Subregions and two between the Indo-Chinese and Manchurian Subregions (see Table 1).

Key to Species

Males

1 Ground-colour of upper surface of wings yellowish buff or white 2
– Ground-colour of upper surface of wings brown or grey 3
2 Antenna bipectinate ; upper surface of fore wing with two conspicuous spots at distal end of cell . . . . . ***acuminata*** (p. 49)
– Antennae weakly biserrate ; upper surface of fore wing with single dark marking at distal end of cell . . . . . ***manleyi*** (p. 52)
3 Single well-marked transverse fascia present on hind wing ; outer margin of fore wing strongly convex (Pl. 3, fig. 319) . . . . . ***robusta*** (p. 65)
– At least two well-marked transverse fasciae present on hind wing ; outer margin of fore wing straight or weakly convex 4
4 Hind tibia with one pair of spurs. Postmedial fascia on fore wing nearly parallel to outer margin of wing (Pl. 3, fig. 318) . . . . . ***violacea*** (p. 62)
– Hind tibia with two pairs of spurs. Postmedial fascia on fore wing not nearly parallel to outer margin of wing 5
5 Antemedial fascia absent on upper surface of fore wing (Pl. 2, fig. 314) ***leucosticta*** (p. 55)
– Antemedial fascia present on upper surface of fore wing 6
6 Broad, greyish white, transverse band present distal to postmedial fascia on hind wing (Pl. 3, fig. 316) . . . . . ***cupreogrisea*** (p. 58)
– Upper surface of hind wing without white band distal to postmedial fascia on hind wing 7
7 Antemedial fascia on fore wing acutely angled at middle (Pl. 2, fig. 312) ***prunicolor*** (p. 53)
– Antemedial fascia on fore wing not angled at middle 8
8 Genitalia : saccus with long lateral process on either side, without dorsal process (Text-fig. 89) . . . . . ***flavilinea*** (p. 55)
– Genitalia : saccus with single medial dorsal process, without lateral processes. . 9
9 Genitalia as in Text-figs. 102–104 . . . . . ***rectilinea*** (p. 61)
– Genitalia as in Text-figs. 109–111 . . . . . ***rugosa*** (p. 62)

Betalbara acuminata (Leech)

(Text-figs. 72–75)

Drepana acuminata Leech, 1890 : 113.
Drepana acuminata Leech ; Strand, 1911 : 201.
Drepana acuminata Leech ; Gaede, 1931 : 25.
Platypteryx acuminata (Leech) Kirby, 1892 : 731.
Betalbara acuminata (Leech) Inoue, 1959 : 175. [Good fig.]
Betalbara acuminata (Leech) ; Inoue, 1962 : 24. [Good fig.]
Albara ogasawarae Matsumura, 1927 : 47. [Synonymy accepted from Inoue 1959 : 175.]
Albara ogasawarae Matsumura ; Gaede, 1931 : 32.
Albara acuminata ogasawarae Matsumura, Inoue, 1953 : 8.
Albara acuminata ogasawarae Matsumura, Inoue, 1956a : 663.
Drepana ida Bryk, 1942 : 27. [Synonymized with *acuminata* by Inoue, 1959 : 175.]
Albara ' ogasawarae ' ida (Bryk) Bryk, 1949 : 28.

Distinguished from its close relative *manleyi* by the male and female genitalia (Text-figs. 72–75), the bipectinate antennae of the male, the more strongly falcate

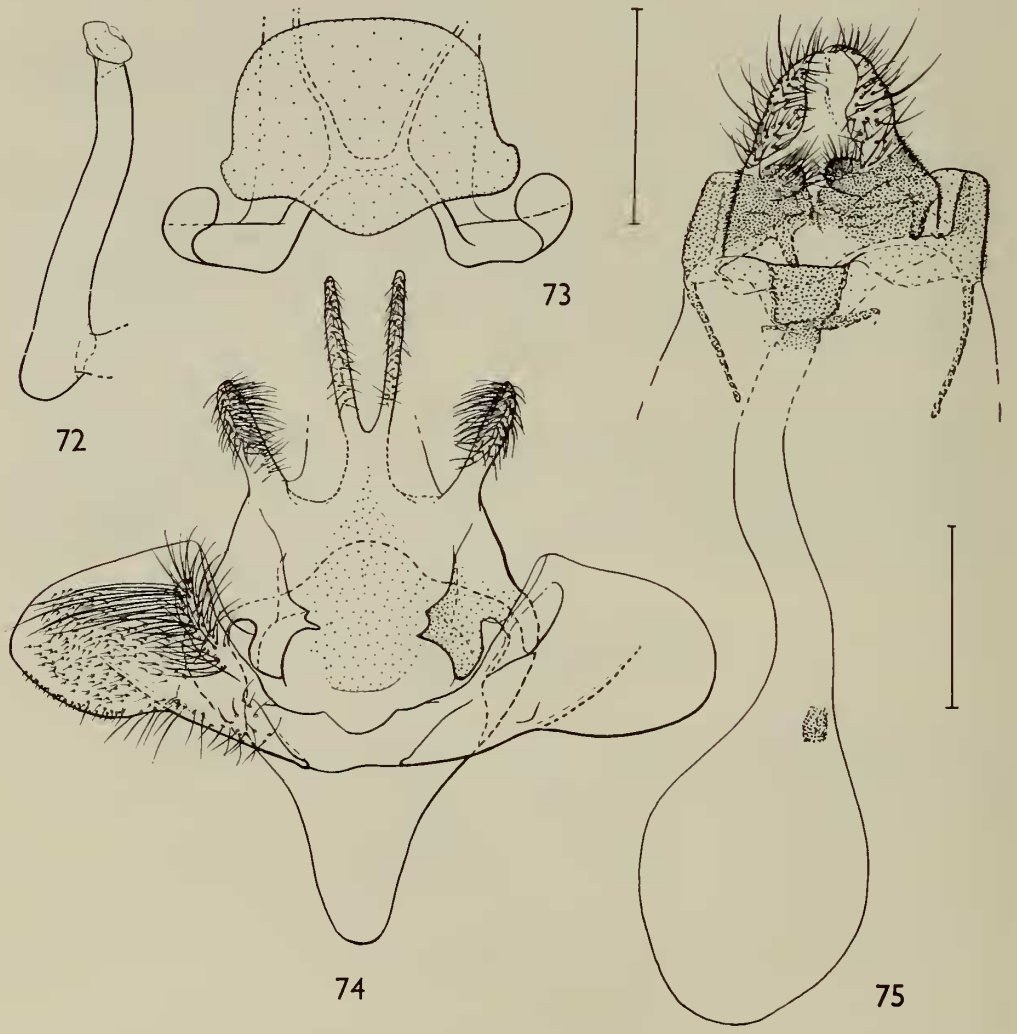
fore wing, the paler ground-colour of the wings, and by the presence on the fore wing of two discocellular spots.

Wing. ♂ 18·0–21·0 mm. (6) ; ♀ 24·0 mm. (1).

Distribution. China (Hupeh, S. Shensi) and Japan (see Inoue, 1959, 1962).

Material examined. Types. *acuminata.* Holotype ♂, Ichang [Hupeh], vii.1888; Drepanidae genitalia slide No. 735. In the BM(NH).

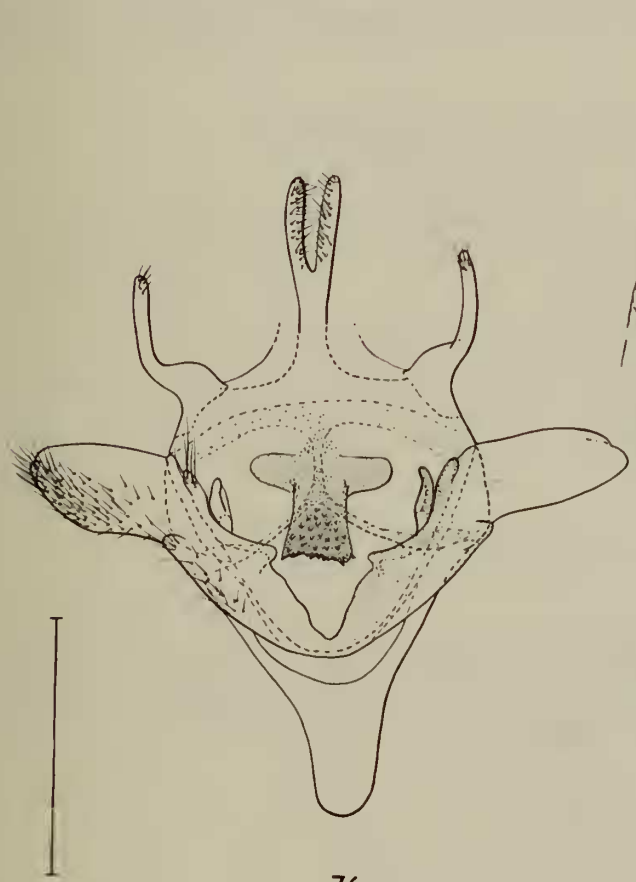
ogasawarae. Two syntypes, Japan, Honshu ; in the University of Hokkaido, Japan. [Not seen.]

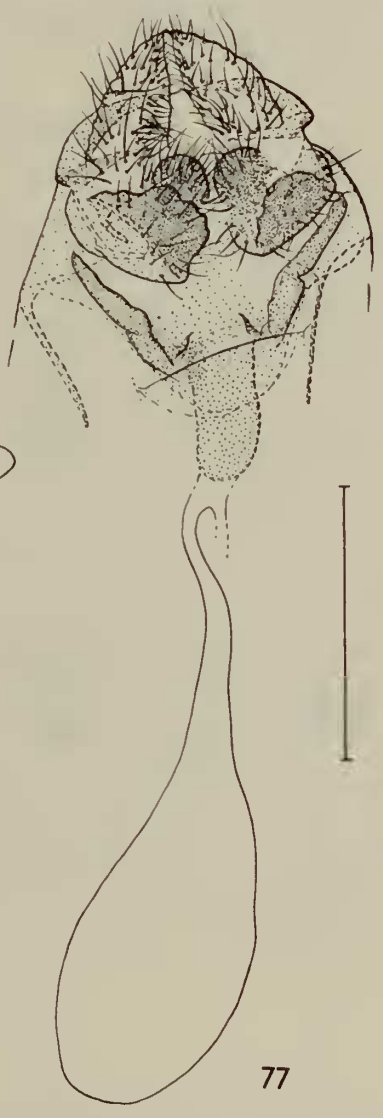


FIGS. 72–75. *Betalbara acuminata*, genitalia. 72, aedeagus ; 73, ♂ eighth sternite and apodemes of eighth tergite ; 74, ♂ ; 75, ♀.

ida. Holotype ♂, Japan, Karinzawa [Karuizawa] ; Drepanidae genitalia slide No. 736 ; in the Naturhistoriska Riksmuseet, Stockholm.

Other material. *Museum Koenig, Bonn*. CHINA : 2 ex., S. Shensi, Tapaishan im Tsinling (*Höne*). *BM(NH)*. CHINA : 1 ♂, S. Shensi, Tapaishan im Tsinling, 26.vi.1935 (*Höne*).





FIGS. 76, 77. *Betalbara manleyi manleyi*, genitalia. 76, ♂ ; 77, ♀.

Betalbara manleyi (Leech)

(Pl. 3, fig. 315 ; Text-figs. 76–80)

Drepana manleyi Leech, 1898 : 366.

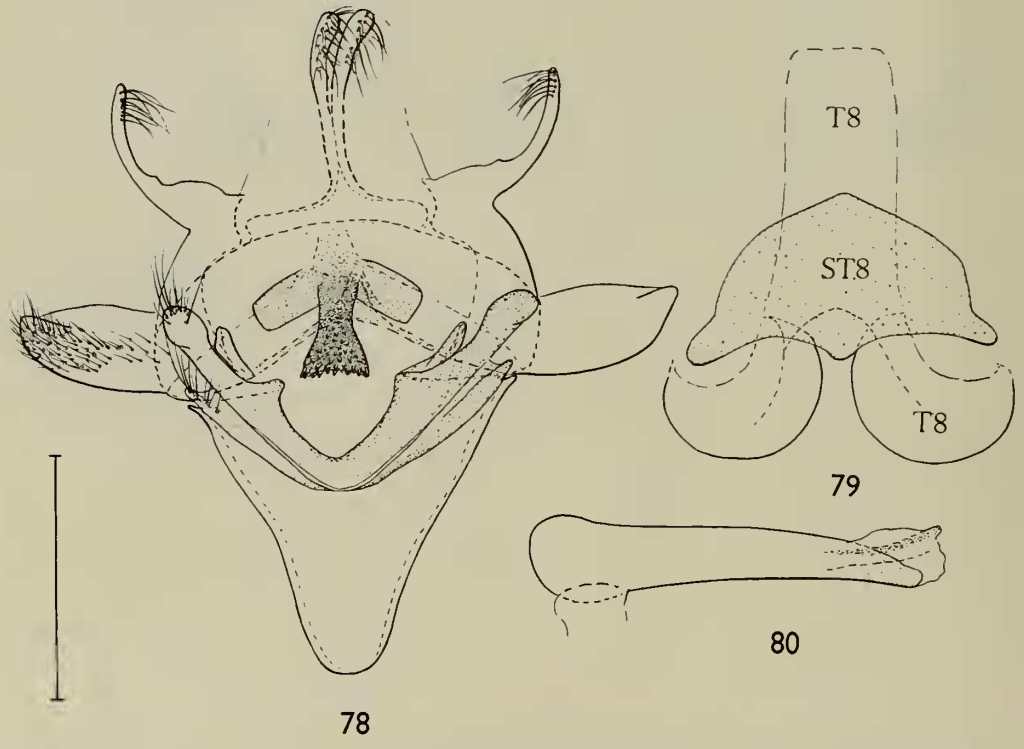
Separated from the closely allied *acuminata* by the ciliate and unilamellate antenna, the less strongly falcate fore wing, the darker ground-colour of the wings, the presence of only one discocellular spot and by the genitalia of both sexes (Text-figs. 76–80).

Two subspecies are known : the nominate subspecies (Japan) and *prolatior* (China).

Betalbara manleyi manleyi (Leech)

(Text-figs. 76, 77)

Drepana manleyi Leech ; Strand, 1911 : 201. [Fig.]
Albara manleyi (Leech) Nagano, 1917 : 38 (English text).
Albara manleyi (Leech) ; Gaede, 1931 : 32.
Betalbara manleyi (Leech) Matsumara, 1927 : 47.
Betalbara manleyi (Leech) ; Inoue, 1953 : 8.



Figs. 78–80. *Betalbara manleyi prolatior*, ♂ genitalia. 78, ♂ ; 79, eighth tergite and sternite ; 80, aedeagus.

Betalbara manleyi (Leech) ; Inoue, 1956 : 369.
Betalbara manleyi (Leech) ; Inoue, 1959 : 175. [Good fig.]
Betalbara manleyi (Leech) ; Inoue, 1962 : 23. [Good figs.]

Separable from *prolatior* by the male genitalia (see *prolatior*).
Wing. ♂ 14·5–17·0 mm. (7) ; ♀ 20·0 mm. (1).
Distribution. Japan (see papers above by Inoue, 1953–1962).

Type. I select as LECTOTYPE one of the two ♂ syntypes in the BM(NH) labelled : Yokohama, Manley Coll ; Leech Coll. 1900–64 ; *Drepana manleyi* sp. n., Type ♂ [probably in Leech's handwriting] ; Drepanidae genitalia slide No. 921.

Betalbara manleyi prolatior **ssp. n.**

(Pl. 3, fig. 315 ; Text-figs. 78–80)

♂. Distinguished from the nominate subspecies by the male genitalia. The shape of the gnathus and valve processes are diagnostic.
♀. Unknown.
Wing. ♂ 16·5–17·0 mm. (6).

Holotype ♂. China : Chekiang, West Tien-mu-Shan, 4.vi.1932 (*Höne*) ; Drepanidae genitalia slide No. 920. In the Museum Koenig, Bonn.
Paratypes. *Museum Koenig, Bonn.* China : 3 ♂, type-locality, 4.vi.1932 (*Höne*). *Daniel Collection, Munich.* China : 3 ♂, type-locality, 4.vi.1932 (*Höne*).

Betalbara prunicolor (Moore) **comb. n.**

(Pl. 2, fig. 312 ; Text-figs. 81–84)

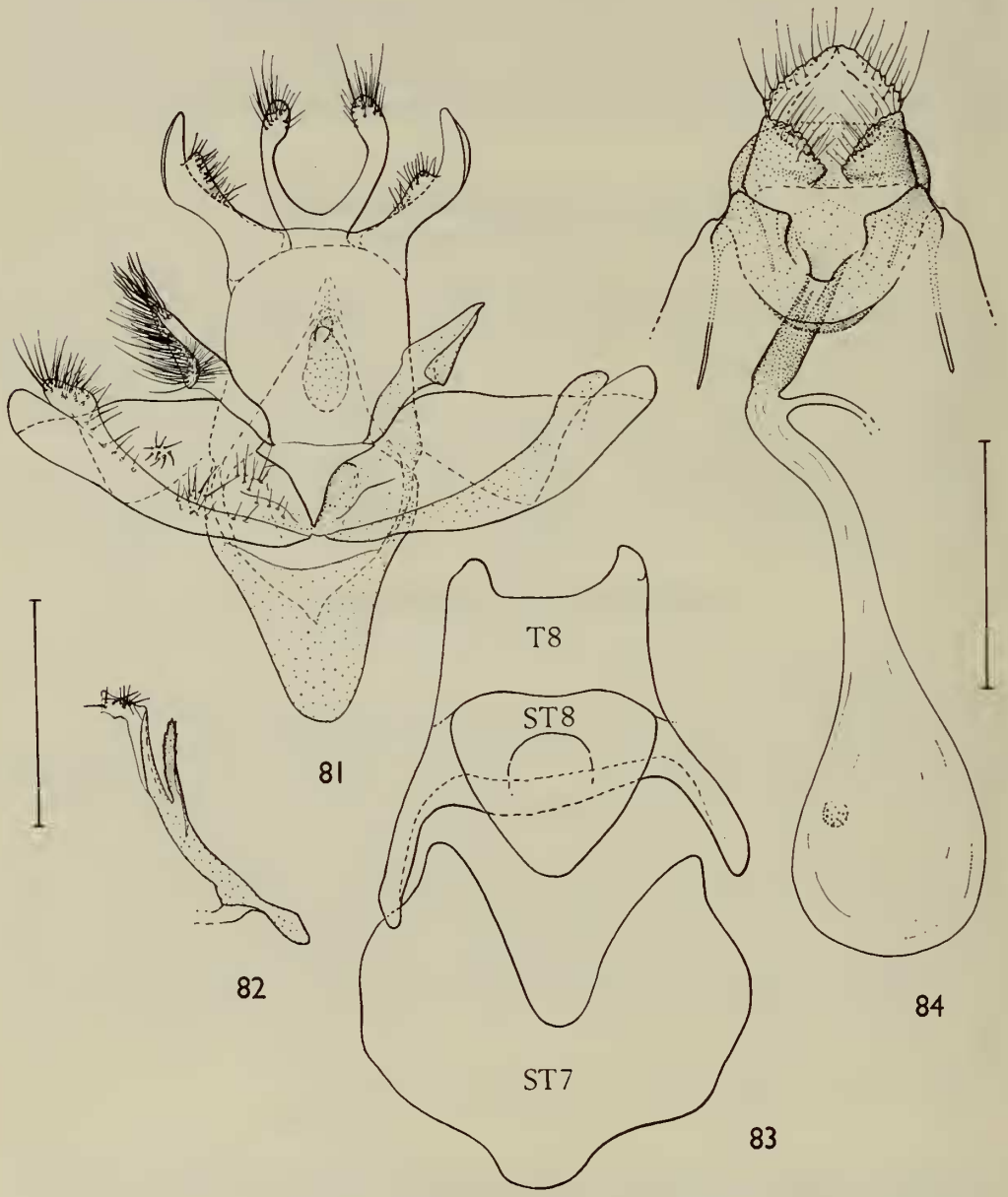
Drepana prunicolor Moore, 1879 : 288.
Albara prunicolor (Moore) Warren, 1922 : 468. [Good fig.]
Albara prunicolor flavilinea Leech ; *sensu* Warren, 1922 : 469. [Good figs.]
Albara prunicolor (Moore) Gaede, 1931 : 33.
Nordstroemia prunicolor (Moore) Bryk, 1943 : 14. [*Partim.*]
Nordstroemia prunicolor warreni Bryk, 1943 : 14. [Fig.] **syn. n.**

This species is illustrated by Warren, (1922) both as *prunicolor* (49g) and as *flavilinea* (49f, g), the latter having been misidentified by Warren. It is readily separated from its nearest allies *flavilinea* and *rectilinea* by the sharply angled antemedial fascia on the fore wing, by the fact that both R_1 and R_2 arise from the areole, and by the genitalia of both sexes (Text-figs. 81–84). In the male genitalia, the conspicuous, serrate, lateral process of the aedeagus and the shape of the seventh sternite are diagnostic.
Wing. ♂ 12·5–19·5 mm. (11) ; ♀ 16·5–17·5 mm. (3).
Distribution. N.E. India, Sikkim, N.E. Burma and China.

Material examined. Types. *prunicolor.* I select as LECTOTYPE a ♂ syntype from the Staudinger collection in the Zoological Museum, Berlin, labelled : Darjeeling ; Drepanidae genitalia slide No. 1059.

warreni. Holotype ♂, N.E. Burma, Kambaiti, 2000 m. Drepanidae genitalia slide No. 230 ; in the Naturhistoriska Riksmuseet, Stockholm.

Other material. *BM(NH)*. INDIA : 12 ex., Assam, Khasia Hills. SIKKIM : 1 ♂, 1 ♀, 1887, 2.x.1888. *Daniel Collection, Munich*. CHINA : 1 ♂, which may prove to represent a new subspecies.



FIGS. 81–84. *Betalbara prunicolor*, genitalia. 81, ♂ ; 82, aedeagus ; 83, ♂ seventh and eighth sternites, and eighth tergite ; 84, ♀.

Betalbara leucosticta (Hampson) **comb. n.**

(Pl. 2, fig. 314 ; Text-figs. 85–88)

Drepana leucosticta Hampson, 1895 : 287.
Albara leucosticta (Hampson) Warren, 1922 : 469. [Fig. inaccurate, but useful guide.]
Albara leucosticta (Hampson) ; Gaede, 1931 : 32.

Probably quite closely related to *prunicolor* but distinguished by the colour-pattern of both sexes (Pl. 2, fig. 314), the bipectinate antennae of the female, the shape of the male aedeagus and eighth abdominal tergite and sternite and by the lack of a signum in the female genitalia.

Wing. ♂ 11·5–14·0 mm. (8) ; ♀ 15·0–16·0 mm. (3).

Distribution. Sikkim, N.E. India, China and Malaya.

Material examined. Type. I select as LECTOTYPE a ♂ syntype in the BM(NH) labelled : Sikkim, 8.7.91, *G. C. Dudgeon*, 94–52 ; *Drepana leucosticta* Hampsn. type ♂ ; Drepanidae genitalia slide No. 1600.

Other material. *BM(NH)*. India : 7 ♂, 3 ♀, Assam, Khasis, xi.1894, x.1895, 1906. *Museum Koenig, Bonn.* China : 1 ♂, [Kwangtung], Canton. Two males from Malaya in the BM(NH) may prove to represent a new subspecies.

Betalbara flavilinea (Leech) **comb. n.**

(Pl. 2, fig. 313 ; Text-figs. 89–96)

Albara flavilinea Leech, 1890 : 113.

Distinguished from the closely related *prunicolor* by the dentate (not sharply angled) postmedial fascia on the fore wing and by the fact that R_1 arises from the distal end of the cell. Separated from both *prunicolor* and *rectilinea* by the genitalia, in particular by the presence of saccular processes in the male and the absence of a signum in the female.

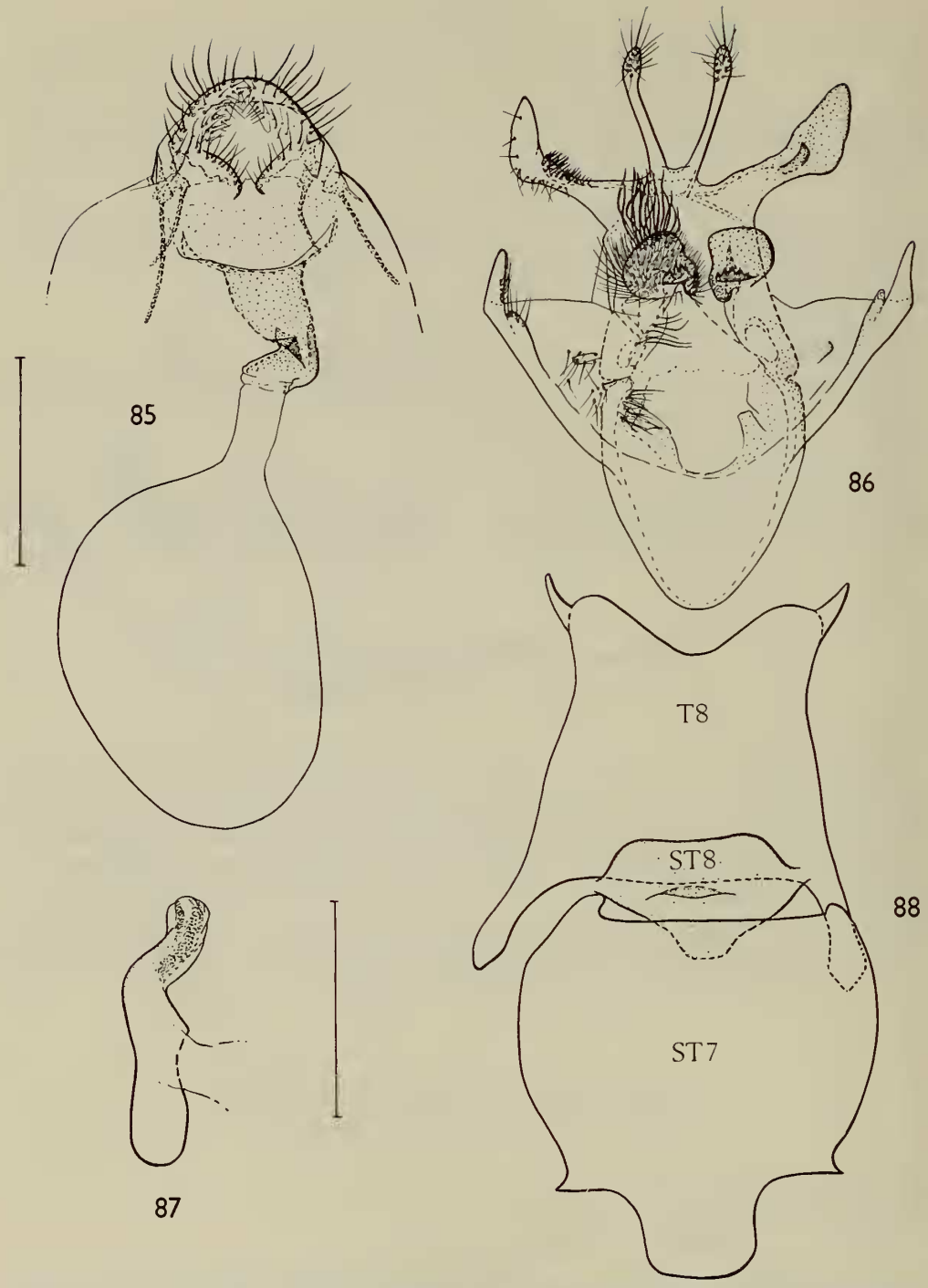
There are two subspecies, both at present known only from China. There is, however, a single male, without an abdomen, from Formosa, in the BM(NH) which will probably prove to represent this species.

Betalbara flavilinea flavilinea (Leech)

(Pl. 2, fig. 313 ; Text-figs. 89–91)

Drepana flavilinea (Leech); Strand, 1911 : 201 [Fig.]
Drepana flavilinea (Leech) ; Gaede, 1931 : 26.
Albara prunicolor flavilinea (Leech) Gaede, 1931 : 33.
Nordstroemia prunicolor flavilinea (Leech) Bryk, 1943 : 14.

In the fore wing of the illustration given by Strand (1911) the postmedial fascia should be only slightly arcuate posteriorly and more acutely reflexed costad.



FIGS. 85–88. *Betalbara leucosticta*, genitalia. 85, ♀ ; 86, ♂ ; 87, aedeagus ; 88, ♂ seventh and eighth sternites, and eighth tergite.

Separable from *shensiensis* by the male genitalia.

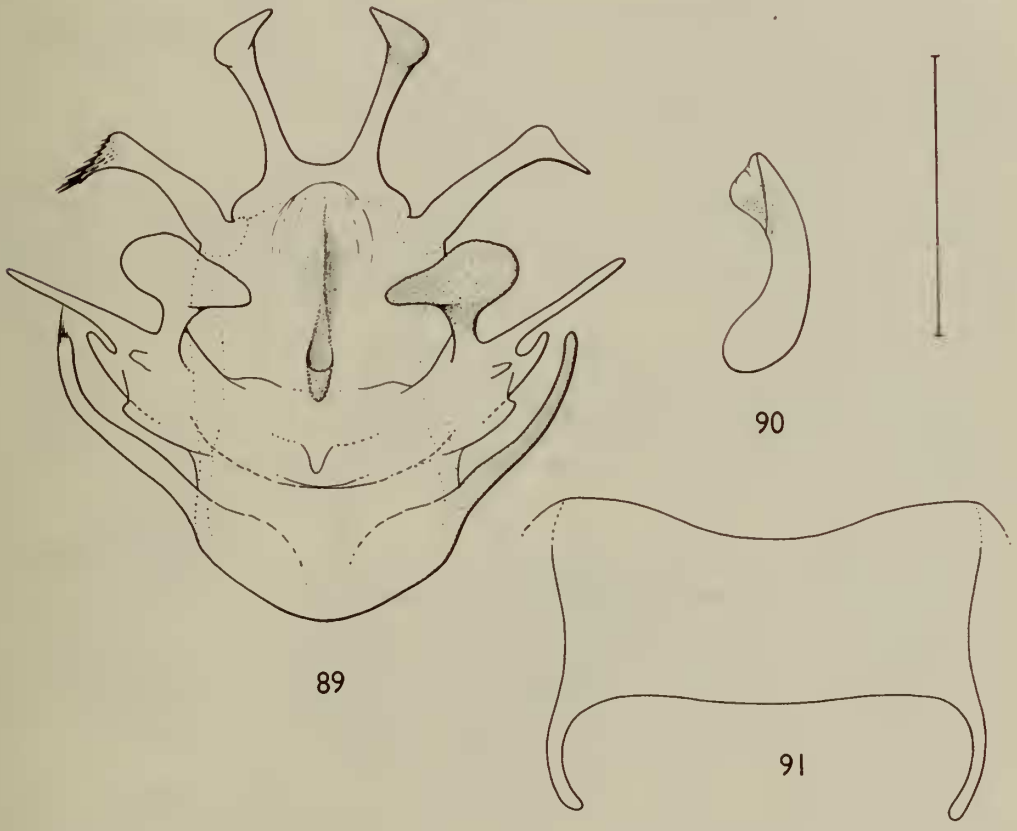
Wing. ♂ 11·5–15·0 mm. (10) ; ♀ 16·0–18·0 mm. (3).

Bryk (1943) correctly pointed out that Warren, *in* Seitz, (1922 : 469) misidentified as '*flavilinea*' specimens of *prunicolor*.

Distribution. China (Hupeh, Kiangsi, Chekiang).

Material examined. Type. Only one of the two original female syntypes can be found in the BM(NH) : this specimen is here selected as LECTOTYPE : Chang Yang, [Hupeh], July 1888 (*A. E. Pratt* Coll.) ; Drepanidae genitalia slide No. 796.

Other material. *BM(NH)*. China : 2 ♂, same data as type, 3 ♂, Chekiang, West Tien-mu-Shan, 17.iv.–7.viii.1932 (*Höne*). *Museum Koenig, Bonn.* 11 ex., Chekiang, Tien-mu-Shan (*Höne*) ; 1 ex., Kiangsi. There is a single male with an incomplete abdomen, from the province of Fukien, in the Museum Koenig, Bonn, which may also represent this species.



Figs. 89–91. *Betalbara flavilinea flavilinea*, ♂ genitalia. 89, ♂ ; 90, aedeagus ; 91, eighth sternite.

Betalbara flavilinea shensiensis ssp. n.

(Text-figs. 92–96)

The male genitalia separate *shensiensis* from the nominate subspecies : nearly all the features of the genitalia differ in their proportions from those of the latter.

Wing. ♂ 14·5–17·5 mm. (20) ; ♀ 16·0–18·5 mm. (6).

Holotype ♂. Sued-Shensi, Tapaishan in Tsinling, *c.* 1700 m., 12.v.1936 (*Höne*) ; Drepanidae genitalia slide No. 789. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 19 ♂, 4 ♀, S. Shensi, Tapaishan im Tsinling, *c.* 1700 m., 12.v.–12.ix.1936 (*Höne*). *BM(NH).* China : 1 ♂, 1 ♀, S. Shensi, Tapaishan im Tsinling, 31.viii.1935, 20.v.1936 (*Höne*).

Betalbara cupreogrisea (Hampson) comb. n.

(Pl. 3, fig. 316 ; Text-figs. 97 ; and 98–100 of the possible ♂ of this species)

Problepsidis cupreogrisea Hampson, 1895 : 287.
Microblepsis cupreogrisea (Hampson) Warren, 1922 : 461. [Fig.]
Microblepsis cupreogrisea (Hampson) ; Gaede, 1931 : 16.

♀. Head and palps dark brown. Antenna very weakly biserrate.

Colour-pattern of wings as in Pl. 3, fig. 316, dark areas brown ; pale areas yellowish brown on fore wing, brownish white on hind wing ; subterminal fascia of fore wing white ; apex and anterior half of outer margin of fore wing suffused with yellowish buff. Under surface of both wings pale brown suffused with buff at apex of fore wing ; fore wing with weakly marked buff subterminal fascia anteriorly, hind wing with broad diffusely marked antemedial fascia and postmedial fascia.

Fore wing strongly covex at M_3, hind wing angled at M_3.

Legs nearly white, but with front surface of fore leg brown.

♀ genitalia as in Text-fig. 97. Corpus bursae without signum.

♂ (tentative identification, see Distribution). As for ♀ but with bipectinate antennae.

♂ genitalia as in Text-figs. 98–100. Medial diaphragmal sclerotization with dorsal diverticulum.

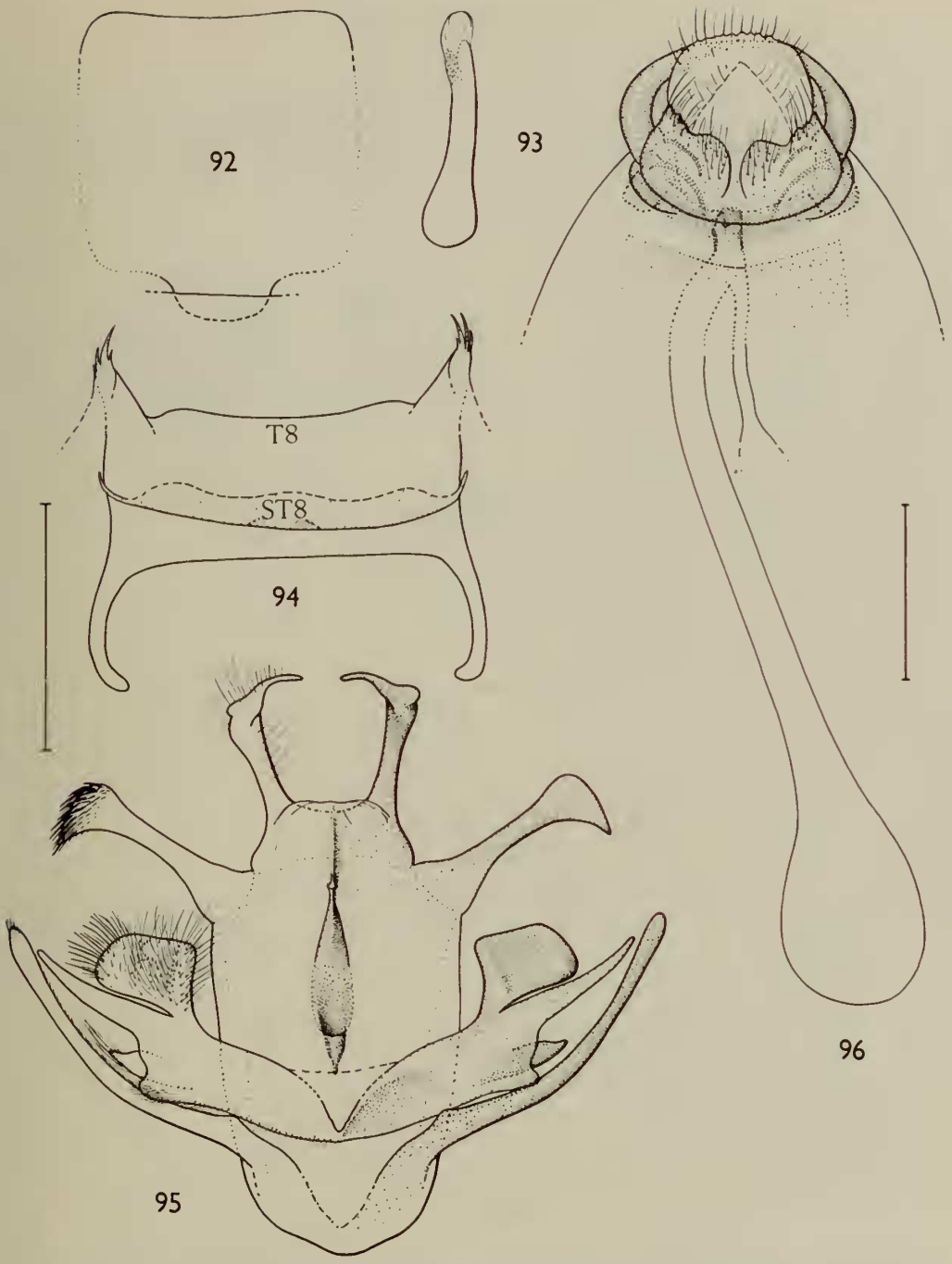
Wing. ♀ 12·5 mm. (1).

Possibly most closely allied to *flavilinea* Leech, but separated by a larger taxonomic gap than that between *flavilinea* and *prunicolor* Moore.

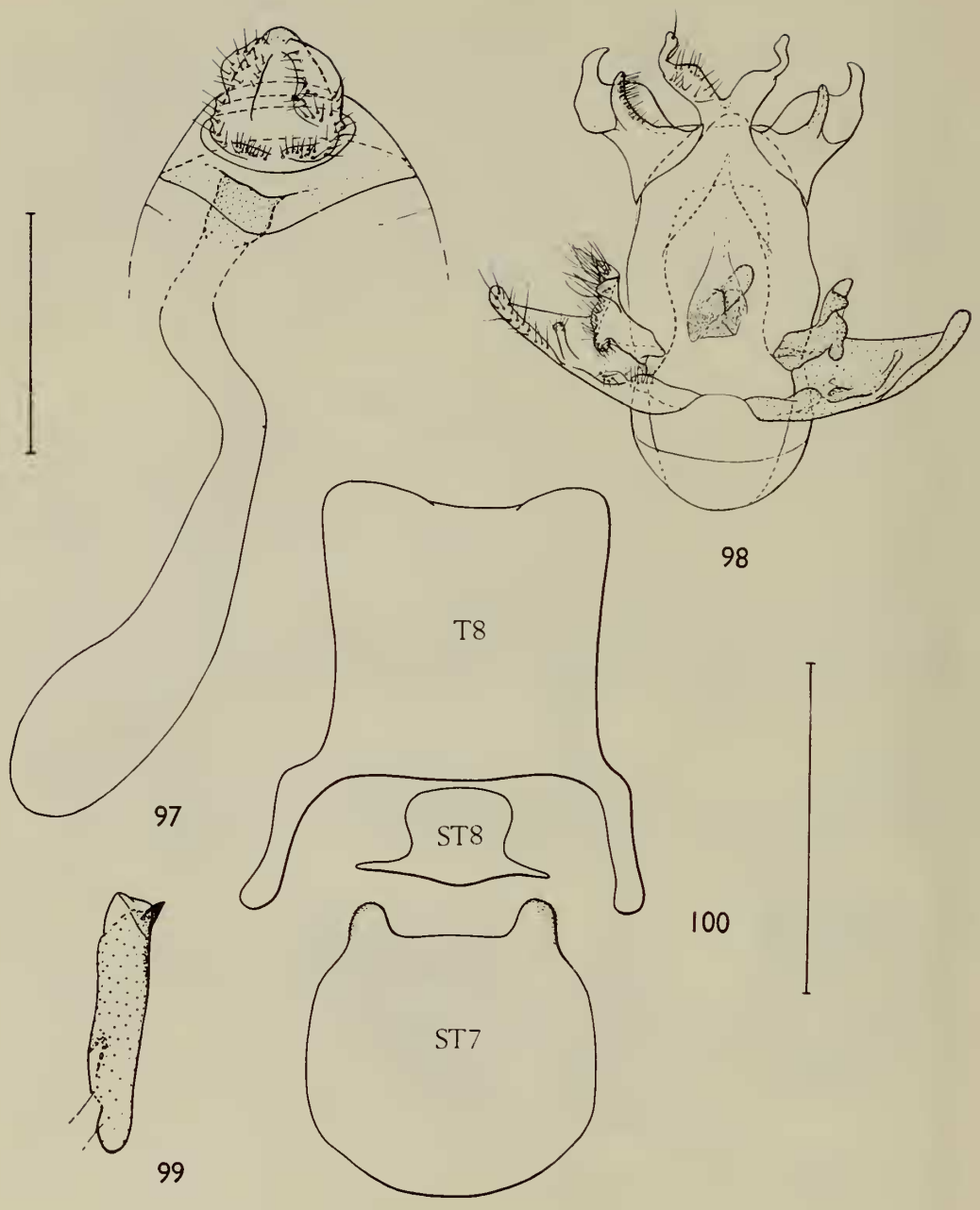
Distribution. This species is known with certainty only from the type-locality in south Burma. Two males from the Khasis (N.E. India) in the BM(NH) do not exactly match the lectotype in wing shape or colour-pattern and may represent a new species or a different closely related species. Material of both sexes from both India and Burma is needed before this problem can be solved.

Material examined. Type. LECTOTYPE ♀, here selected, labelled : Tenasserim Valley, E. of Tavoy, Burmah, *Doherty* ; *Problepsidis cupreogrisea* ♀, Hmpsn. M.S. type ; Joicey Coll. Brit. Mus. 1925–157 ; Drepanidae genitalia slide No. 72. In the BM(NH).

Other material. (See Distribution.)



FIGS. 92–96. *Betalbara flavilinea shensiensis*, genitalia. 92, ♂ seventh sternite ; 93, aedeagus ; 94, ♂ eighth tergite and sternite ; 95, ♂ ; 96, ♀.



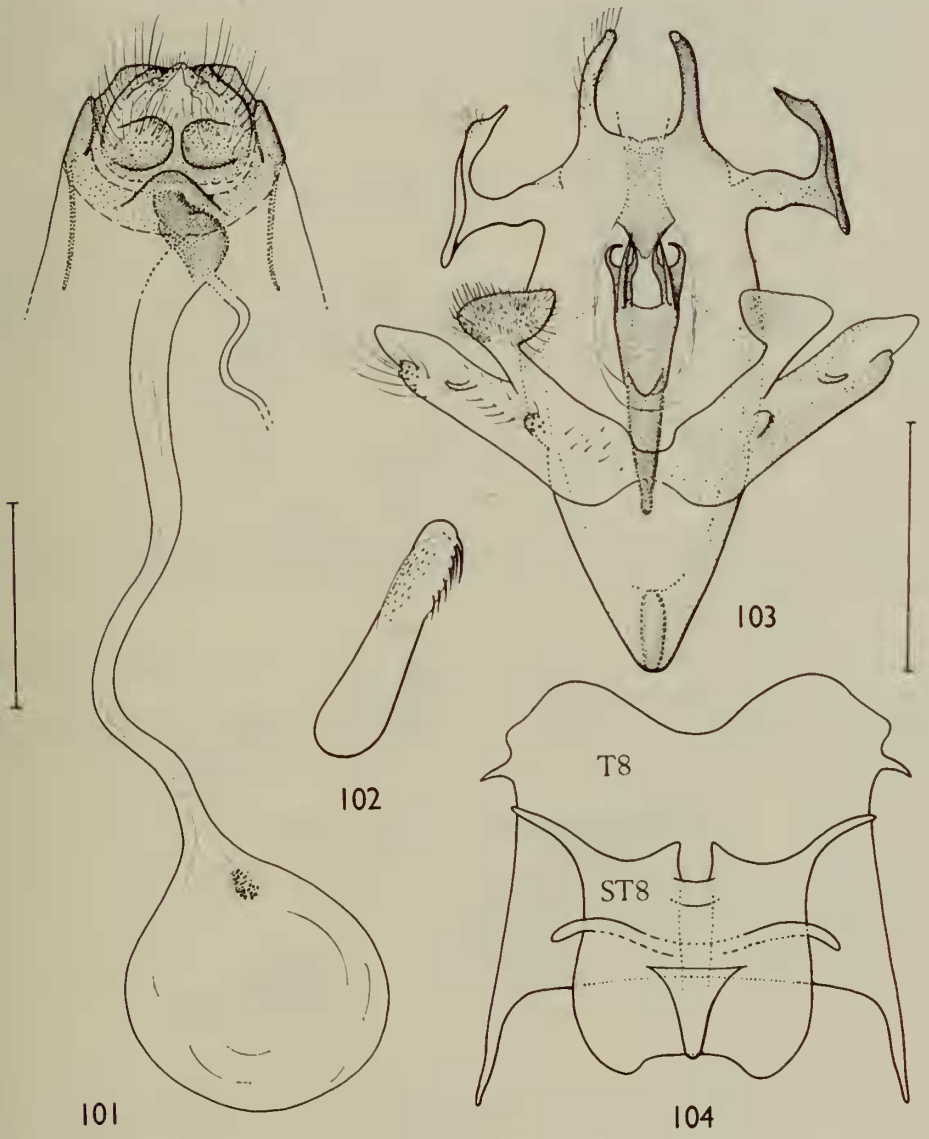
FIGS. 97–100. *Betalbara cupreogrisea*, genitalia. 97, ♀ ; 98, ♂ ; 99, aedeagus ; 100, ♂ seventh and eighth sternites and eighth tergite.

Betalbara rectilinea sp. n.

(Text-figs. 101–104)

♂. Palp and front of head dark brown ; vertex grey-brown. Upper surface of antennae grey-brown, bipectinate from base to about three-quarters of its length.

Thorax and abdomen as for colour of adjacent surface of wing. Colour-pattern of both wings as in *rugosa* (Pl. 3, fig. 317), ground-colour grey-brown with very pale brown markings.



FIGS. 101–104. *Betalbara rectilinea*, genitalia. 101, ♀ ; 102, aedeagus ; 103, ♂ ; 104, ♂ eighth tergite and sternite.

Under surface of both wings pale grey-brown with yellowish costal area apicad on fore wing and with trace of postmedial fascia on both wings. Legs very pale brown with outer surface of pro- and mesothoracic legs grey-brown.

♂ genitalia as in Text-figs. 102–104.

♀. Similar to male, but antenna ciliate and very weakly biserrate.

♀ genitalia as in Text-fig. 101.

This species apparently forms a superspecies with *rugosa* from which it differs in the male genitalia (see *rugosa*). It is also closely related to *prunicolor* and *flavilinea* but can be distinguished by the male and female genitalia, and by the shape on the fore wing of the posterior half of the antemedial fascia which is straight and at right angles to the anal margin of the wing. It is also separable from *prunicolor* by the venation of the fore wing.

Distribution. China (Szechwan).

Wing. ♂ 12·0–13·5 mm. (5) ; ♀ 12·0–14·0 mm. (2).

Holotype ♂. China : Kwanhsien, vii.1930 (*Franck*) ; Drepanidae genitalia slide No. 792. In the BM(NH).

Paratypes. *BM(NH)*. China : 4 ♂, 1 ♀, Szechwan, Kwanhsien, 15.viii.1925, 10.viii.1926, vii.1930 (*Franck*) ; 1 ♀, Szechwan, Mt. Omei, 4000–5000 ft., 1.viii.1929 (*Franck*). *U.S. National Museum*. China : 1 ♀, Szechwan, Mt. Omei, Shinkaisi (*Graham*).

Betalbara rugosa sp. n.

(Pl. 3, fig. 317 ; Text-figs. 109–111)

Separable from *rectilinea* with which it forms a superspecies, by the male genitalia (particularly by the shape of the eighth abdominal tergite and sternite, the aedeagus, gnathus, uncus, and the weakly bifurcate socii).

Wing. ♂ 12·0–18·0 mm. (2).

Holotype ♂. N.E. India : Naga Hills, 2000 ft., vii,viii.1889 (*Doherty*) ; Drepanidae genitalia slide No. 798. In the BM(NH).

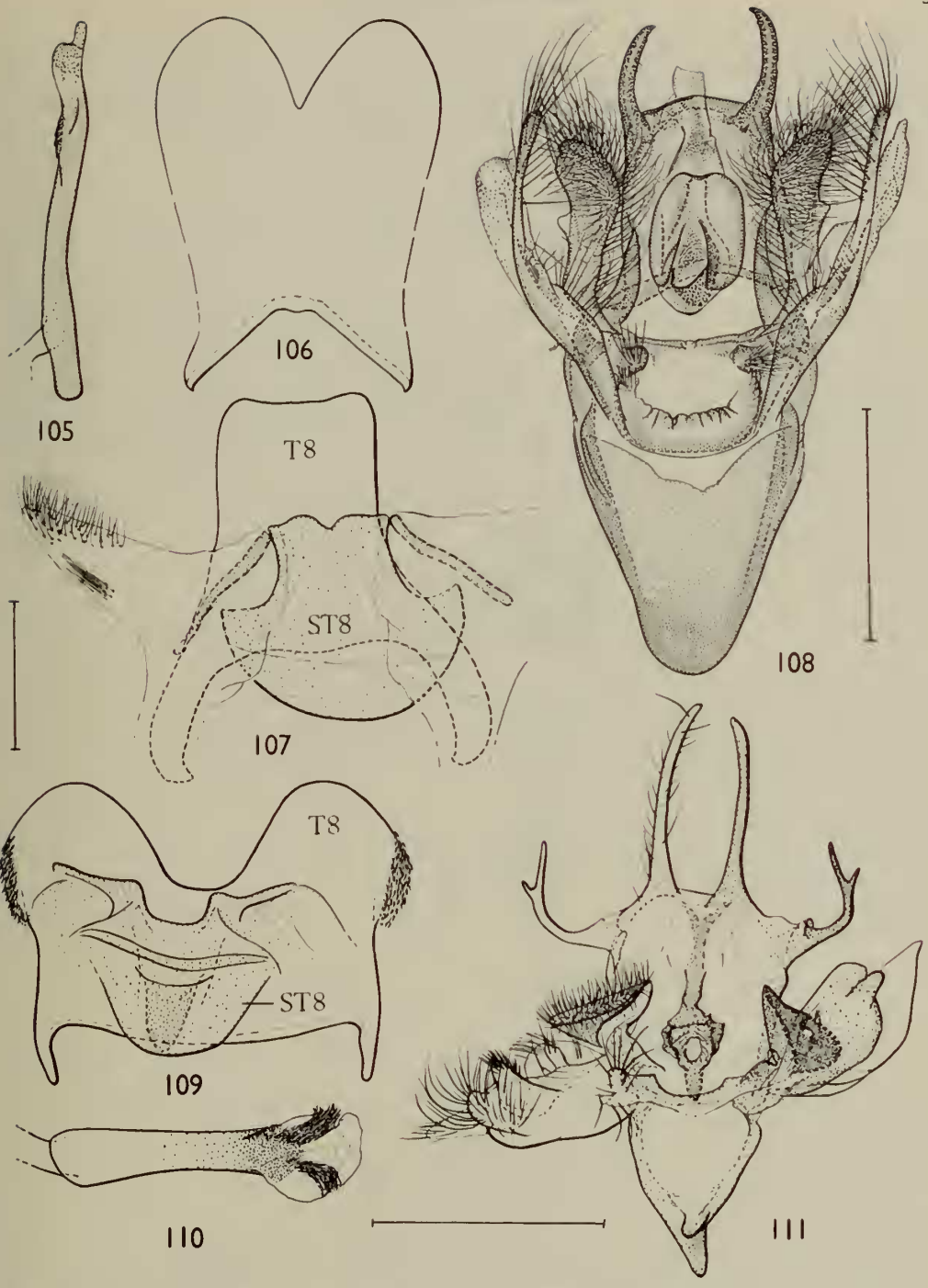
Paratypes. *BM(NH)*. N.E. India : 1 ♂, Khasis, x.1895 (Nat. Coll.). Malaya: 1 ♂, Pahang, Cameron Highlands, Ginting Kial, 5000 ft., 23.v.1939.

Betalbara violacea (Butler) comb. n.

(Pl. 3, fig. 318 ; Text-figs. 105–108, 112)

Agnidra violacea Butler, 1889 : 42. [Good fig.]
Drepana violacea (Butler) Strand, 1911 : 203.
Albara violacea (Butler) Warren, 1922 : 469.
Albara violacea (Butler) ; Gaede, 1931 : 33.
Albara takasago Okano, 1959 : 38. Holotype ♂, Central Formosa, Puli-Washe, v.1958 [not seen]. **syn. n.**

Distinguished in both sexes from the rest of the genus by the obsolescent subterminal fascia on either fore or hind wing, and in the male by the presence of only one pair of spurs in the hind tibia. The male genitalia are also diagnostic, especially by virtue of the presence of eversible sacs and the absence of an uncus.



FIGS. 105–111. *Betalbara*, ♂ genitalia. 105–108, *violacea*. 105, aedeagus ; 106, seventh sternite ; 107, eighth tergite, and eighth sternite showing left lateral sac ; 108, ♂. 109–111, *rugosa*. 109, eighth tergite and sternite ; 110, aedeagus ; 111, ♂.

Wings. ♂ 18·0–20·0 mm. (20) ; ♀ 18·5–22·0 mm. (9).

I have not seen the type of *takasago* but I have been able to study a male from Central Formosa, identified as conspecific with the type by Dr. H. Inoue, who is in agreement with me concerning the above synonymy.

Distribution. N.W. and N.E. India, Formosa, China (Szechwan, Yunnan, Kwangtung, Chekiang, Fukien).

Material examined. Type. I select as LECTOTYPE a ♂ syntype in the BM(NH) labelled : Dharmsala 87.59 ; *Agnidra violacea* Butler type ; Drepanidae genitalia slide No. 787.

Other material. *BM(NH)*. India : 2 ♂, Dharmsala, 1 ♂, 1 ♀, Musuri, ix.1917, vii–x.1922 (*Mackenzie*) ; 1 ♀, Dalhousie (*Harford*) ; 2 ♀, Darjeeling, Gopaldhara, 3440–5800 ft. (*Stevens*). China : 1 ♂, Yunnan, 1918 (*Forrest*) ; 1 ♂, [Szechwan], Tu-pa-kep, 7400 ft., 4.ix.1929 ; Formosa : 1 ♂, Central Formosa, 1959; 2 ♂, Fukien, Kuantun, 16.vii ; 9.viii.1938 (*Höne*) ; 2 ♂, 1 ♀, Chekiang, West Tien-mu-

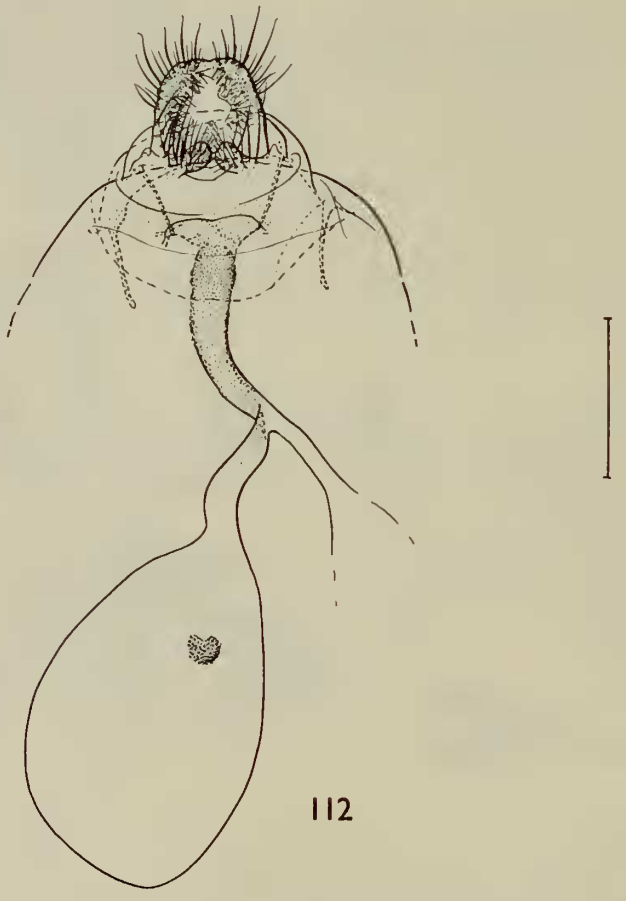


Fig. 112. *Betalbara violacea*, ♀ genitalia.

shan, 29.ix–26.x.1932 (*Höne*). *Museum Koenig, Bonn.* China : 24 ex., Chekiang, East and West Tien-mu-shan ; 11 ex., Fukien, Kuatun ; 1 ex., Kwangtung. *Daniel Collection, Munich.* Formosa : 2 ♂, 1 ♀, Washai, vii.1958. China : 2 ♂, Chekiang, West-Tien-mu-shan, 1600 m., 28.iv., 8.vi.1932 (*Höne*).

Betalbara robusta (Oberthür) comb. n.

(Pl. 3, fig. 319 ; Text-figs. 113–117)

Drepana robusta Oberthür, 1916 : 372.
Drepana robusta Oberthür, 1917 : fig. 3642. [Good fig.]
Drepana robusta Oberthür, Gaede, 1931 : 27.
Albara robusta (Oberthür) Gaede, 1933 : 168. [Fig.]

The large size, the colour-pattern, the shape of the fore wing, and the elongate signum in the female genitalia separate *robusta* from the rest of the genus. The affinities of this species are uncertain but it shares sufficient characters with the remaining species to merit provisional inclusion in *Betalbara*. I prefer to place it here rather than in *Pseudalbara* gen. n. because of the structure of the male eighth abdominal sternite which, unlike that of *Pseudalbara*, is not greatly modified.

The specimens of this species from Shensi in the Museum Koenig, Bonn, are the first known male examples of this species.

Wing. ♂ 22·5 mm. (1) ; ♀ 22·0–26·0 mm. (11).

Distribution. China (Szechwan, Shensi).

Material examined. Type. I select as LECTOTYPE a female syntype in the BM(NH), figured by Oberthür (1917), labelled : Chasseurs Indigènes des Missionaires de Ta-tsien-Lou [China, Szechwan], 1906, *Drepana robusta* Obthr. type ; 3642 ; ex Oberthür Coll. Brit. Mus. 1927–3 ; Drepanidae genitalia slide No. 81.

Other material. *BM(NH)*. China : 5 ♀, [Szechwan], Ta-tsien-lou, 1910 ; 3 ♀, [Szechwan], Tibet, frontière orientale, 1905 ; 1 ♂, S. Shensi, Tapai-shan im Tsinling, 20.vi.1935 (*Höne*). *Museum Koenig, Bonn.* China : 11 ♂, S. Shensi, Tapai-shan im Tsinling (*Höne*).

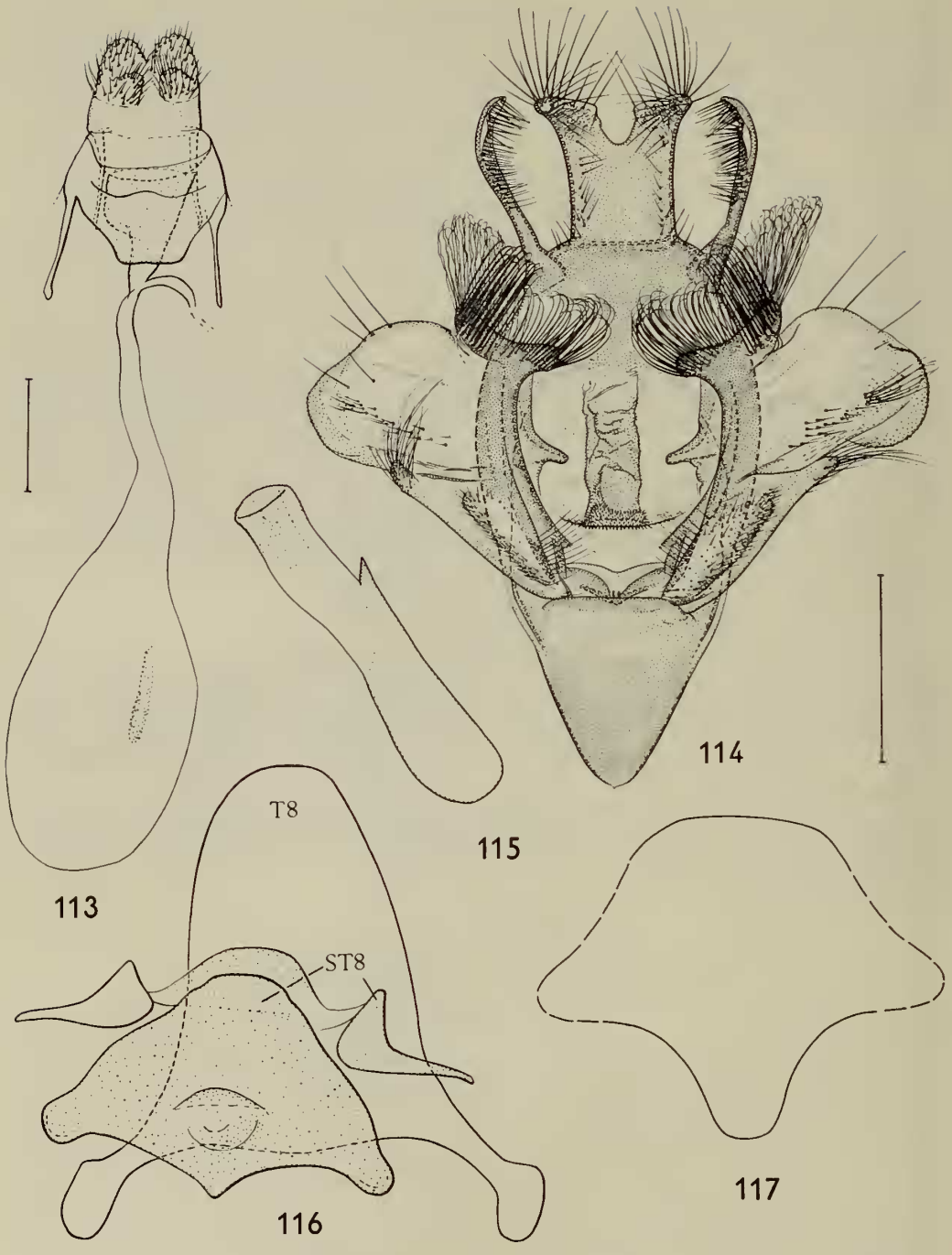
PSEUDALBARA Inoue

(Pl. 3, figs. 320, 321 ; Text-figs. 118–125)

Pseudalbara Inoue, 1962 : 7. Type-species *Drepana parvula* Leech, 1890 : 112, by monotypy.

As suggested by Inoue (1962), this genus is probably closest to *Betalbara*, from which it can be separated by the presence of a vestigial frenulum in the male, the colour-pattern of the fore wing, the absence of fasciae on the hind wing, the anastomosis of $Sc + R_1$ with Rs for a short distance distal to cell in hind wing, the strongly modified seventh and eighth abdominal tergites and sternites in the male, and the large corpus bursae in the female genitalia. It can be separated in the male from all species of *Betalbara*, except *manleyi*, by the presence of lamellate antennae.

Two species are known : the type-species *parvula* (China, S.E. Russia and Japan) and a new species *fuscifascia* (China).



FIGS. 113–117. *Betalbara robusta*, genitalia. 113, ♀; 114, ♂; 115, aedeagus; 116, ♂ eighth tergite and sternites; 117, ♂ seventh sternite.

Pseudalbara parvula (Leech)

(Pl. 3, fig. 320 ; Text-figs. 118–121)

Drepana parvula Leech, 1890 : 112.
Drepana parvula Leech ; Leech, 1898 : 368.
Drepana parvula Leech ; Strand, 1911 : 202.
Drepana parvula Leech ; Gaede, 1931 : 27.
Drepana parvula Leech ; Matsumura, 1931 : 742.
Albara parvula (Leech) Nagano, 1917 : 38.
Betalbara parvula (Leech) Matsumura, 1927 : 47.
Betalbara parvula (Leech) ; Inoue, 1956 : 369.
Betalbara parvula (Leech) ; Inoue, 1959 : 175. [Good fig.]
Pseudalbara parvula (Leech) Inoue, 1962 : 27. [Good figs.]
Drepana muscula Staudinger, 1892 : 335. [Synonymized by Leech (1898).]
Drepana griseola Matsumura, 1908 : 135. [Synonymized by Nagano (1917) ; confirmed by Dr. H. Inoue in litt.]

Distinguished from *fascifascia* by the short, pale, apical crescent and the absence of a medial shade on the fore wing, by the venation of the fore wing in which vein R_1 arises from the proximal end of the areole, the bifurcate uncus and symmetric seventh sternite in the male and by the ovate concave signum in the female genitalia.

Wing. ♂ 11·5–14·0 mm. (2) ; ♀ 12·0–15·0 mm. (20).

Distribution. China (Chekiang, Fukien, Hupeh, Hunan, Szechwan, Kwangsi, Manchuria), south-east U.S.S.R., Japan.

Material examined. Types. *parvula*. I have selected as LECTOTYPE a ♂, from the five syntypes in the BM(NH), labelled : Ningpoo, April, 1886, *Leech* ; Leech Coll. 1900–64 ; *Drepana parvula* type ♂ ; Drepanidae genitalia slide No. 626 ; B. M. negative No. 29116.

muscula. Holotype ♂, China, Szechwan ; Drepanidae genitalia slide No. 956. In the Zoologisches Museum, Berlin.

griseola. Type material Japan, Kumamato ; presumably in Hokkaido University. [Not seen.]

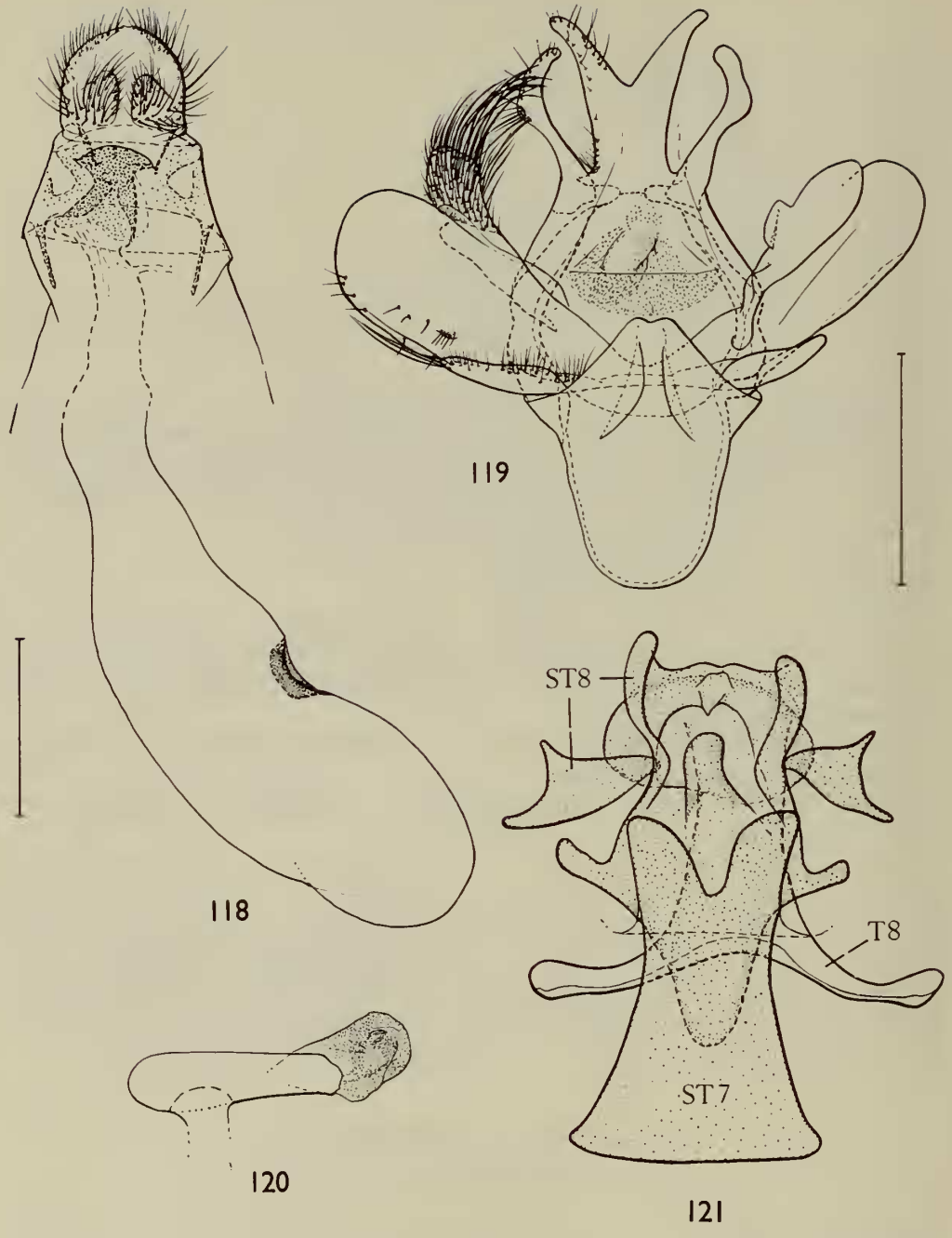
Other material. *BM(NH)*. China : 3 ♀, [Szechwan], Kwanhsien, vii.1930 (*Franck*) ; 1 ♀, Hupeh, Lui Shin Tze, viii.1912 (*Betton*) ; 1 ♀, [Hupeh], Ichang (*Bowring*) ; 2 ♀, Hunan, Hoengshan, 7.vi., 10.viii.1933 ; 2 ♀, Fukien, Kuatun, 2300 m., 27° 40′ N, 117° 40′ E, 20.iv, 17.v.1938 (*Klapperich*) ; 4 ♀, Chekiang, West Tien-mu-shan, 24.iv, 17.v., 30.viii.1932 (*Höne*) ; 3 ♀, Yachialing, vii.1922 (*Bowring*) ; 1 ♀, Kuling [? Szechwan, Kulin], vii.1921. Japan : 1 ♂, 5 ♀, Takao-San, W. of Tokyo, 7.vii., 15.ix.1926 (*Aigner*) ; 1 ♀, Japanese Alps, vii.1926 (*Aigner*).

Pseudalbara fuscifascia sp. n.

(Pl. 3, fig. 321 ; Text-figs. 122–125)

♂. Head and outer surface of palp greyish brown. Antenna yellowish brown ; serrate and ciliate.

Colour of thorax and abdomen as for adjacent surface of wing. In the fore wing R_1 arises from middle of areole and R_2 from near distal end of areole.



FIGS. 118–121. *Pseudalbara parvula*, genitalia. 118, ♀; 119, ♂; 120, aedeagus; 121, ♂ seventh sternite, eighth tergite and sternites.

Colour-pattern of upper surface as in Pl. 3, fig. 321 ; pale areas yellowish brown, darker areas greyish brown. Whitish crescentic area at apex of fore wing bordered anteriorly with dark brown. Upper surface of wings very pale yellowish brown, darker at costa and base of fore wing. Under surface of fore wing with indistinct postmedial fascia and weakly marked discocellular spot ; hind wing with two well-marked discocellular spots. Legs similar in colour to under surface of wings but with outer surface of prothoracic legs greyish brown.

♂ genitalia as in Text-figs. 123–125.

♀. Similar to male, but antennae with shorter cilia.

♀ genitalia as in Text-fig. 122.

Wing. ♂ 13·0–14·0 mm. (5) ; ♀. 15·0–16·5 mm. (5).

Separable from *parvula* by the more elongate, pale, apical crescent and the dark medial shade on the fore wing, and by the fact that both R_1 and R_2 arise from the areole in the fore wing. The asymmetric seventh abdominal sternite and the short, truncate uncus serve to distinguish the male genitalia, and the ribbon-like signum the female genitalia.

Holotype ♂. Chekiang, West Tien-mu-shan, 25.vii.1932 (*Höne*) ; Drepanidae genitalia slide No. 929. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* CHINA : 2 ♀, 2 ♂, type-locality, 25.vii.–10.ix.1932 (*Höne*). *BM(NH).* CHINA : 3 ♂, 2 ♀, Szechwan, Kwansien, 10.viii.1926, 27.vii.1928, vii.1930 (*Franck*) ; 1 ♀, Szechwan, Tu-pa-keo, 7400 ft., 5.ix.

NORDSTROEMIA Bryk

(Pls. 3–10, figs. 322–329, 333–356 ; Text-figs. 126–164)

Nordströmia Bryk, 1943 : 12. Type-species *Nordströmia amabilis* Bryk 1943 : 13, by original designation.

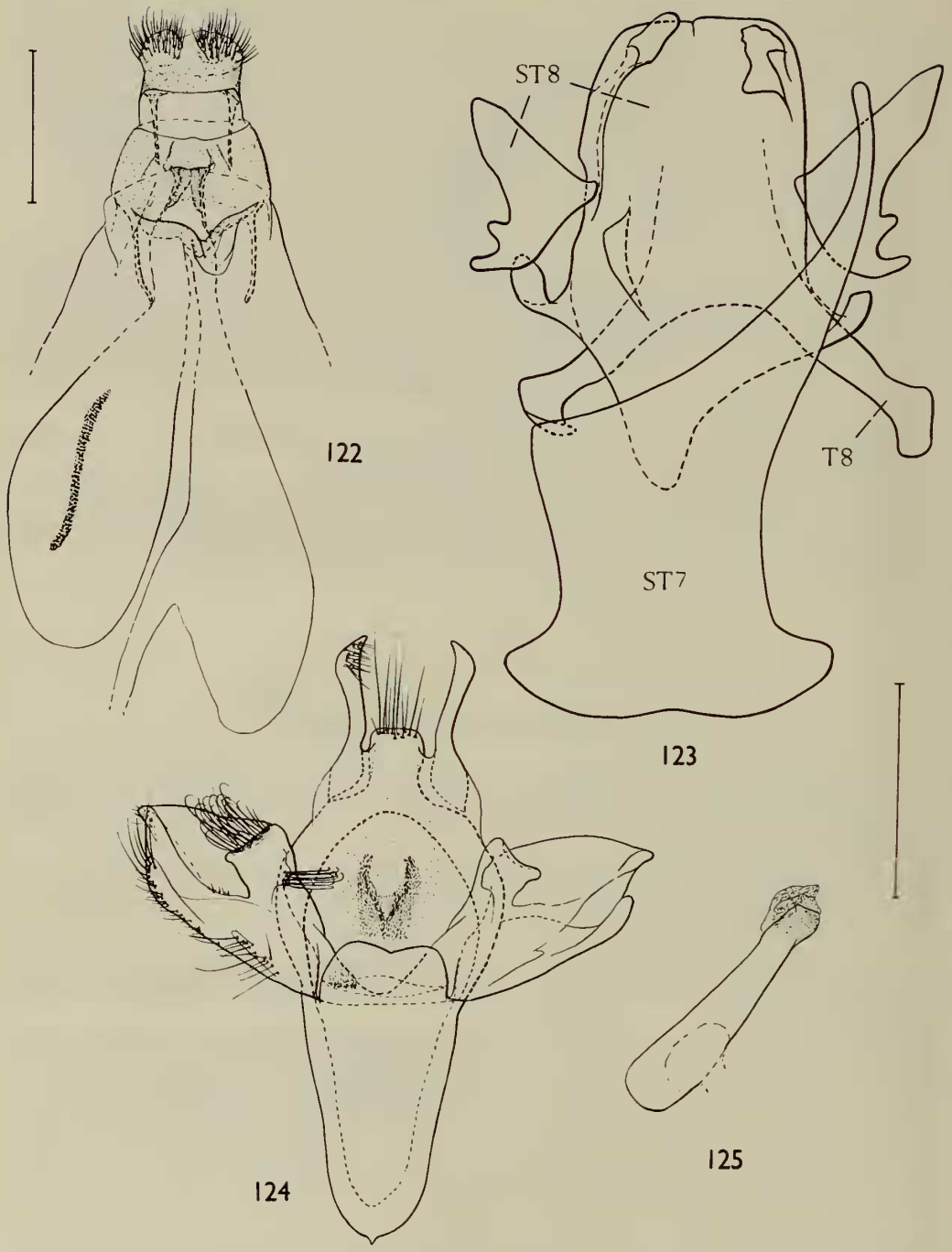
Nordströmia Bryk ; Inoue, 1962 : 26.

Allodrepana Roepke, 1948 : 214. Type-species *Allodrepana siccifolia* Roepke, 1948 : 214, by original designation. [Synonymized by Inoue, 1962 : 26.]

Albara Walker ; *sensu* Gaede, 1931 : 31. [*Partim.*]

♂. Palp upturned to just above labrum. Antenna bipectinate from base to between about three-fifths and three-quarters of its length ; shaft coated proximally with brilliantly lustrous scales except in *undata*.

Mesothoracic tibia with one pair of spurs, metathoracic tibia with two pairs of spurs. Fore wing falcate except in some specimens of *humerata ;* vein R_1 arises from proximal half of areole in *vira*, but from near distal end of cell in remaining species ; R_2 arises from near, or at, distal end of areole, $Sc + R_1$ in hind wing approximates to Rs for short distance distal to cell. Ground-colour of upper surface of fore wing one of various shades of buff or grey ; costal area with two or more dark patches ; antemedial fascia and postmedial fascia well-marked, lunulate in *undata*, angled near costa in *humerata*, straight or nearly so in rest of genus ; two or more discocellular spots usually present (pale in *vira* and *bicostata*, dark in remaining species) or with line of dark scales along discocellular vein ; subterminal fascia, when present, a row of neural spots, or in *vira* a continuous pale line ; fringe of outer margin as for ground-colour of wing, but dark brown or grey apically. Ground-colour of upper surface of hind wing similar to fore wing in most species but paler in *undata ;* in *bicostata* (q.v.) anal margin of hind wing is similar



FIGS. 122–125. *Pseudalbara fuscifascia*, genitalia. 122, ♀; 123, ♂ seventh sternite, eighth tergite and sternites; 124, ♂; 125, aedeagus.

to fore wing in coloration but rest of wing is much paler and differently coloured ; antemedial fascia well-marked and nearly straight in most species, but only present at anal margin in *bicostata*, very poorly defined in *humerata* and either absent or weakly marked and lunulate in *undata* ; postmedial fascia arcuate in *humerata*, present only at anal margin in *bicostata*, either absent or weakly marked and lunulate in *undata*, strongly marked and either straight or slightly arcuate in remaining species ; subterminal fascia represented by poorly marked neural spots in at least some specimens of each species, except in *bicostata* and *humerata* which have no subterminal fascia and in *vira* which has a pale continuous subterminal fascia. Under surface of wings grey, buff or yellow, variously marked, usually with poorly defined postmedial fasciae.

♂ genitalia : valve broad with well-developed sacculus and L- or T-shaped process bearing long setae at base of costa ; medial sclerotization of diaphragma weakly developed except in *duplicata* which bears three short spines ; short spine or lobe at each side arising from lateral sclerotization of diaphragma, partly concealed by valve, well-developed except in *undata* or *humerata*, spines overlapping in *lilacina* ; vinculum produced inwards posteriorly in *bicostata* to form gnathus ; socius strongly developed, with arcuate apical spine except in *undata*, *humerata* and *duplicata* ; uncus strongly developed, bifurcate apically except in *humerata* ; aedeagus variously ornamented ; seventh abdominal sternite forming part of genitalia, except in *undata* and *humerata*, weakly sclerotized, without apodemes in *vira*, *bicostata* and *duplicata*, with single medial apodeme in remaining species ; eighth abdominal tergite well-developed, broad, with lateral apodemes ; eighth abdominal sternite convex posteriorly in *duplicata*, emarginate in rest of genus ; long eversible sac on each side of eighth sternite in *vira*.

♀. As for male, but antennae filiform, weakly ciliate.

♀ genitalia : ostium with lateral and ventral lips ; eighth segment well-developed, bilobed and invaginate dorsally except in *vira*, *bicostata* and *undata* ; corpus bursae without signum, or with single, small, oval, invaginate signum.

Nordstroemia is probably most closely allied to *Betalbara* Matsumura from which it can be separated by the colour-pattern of the wings and by the male genitalia.

Except for *humerata* (and *undata* which is placed tentatively in *Nordstroemia*) the species of this genus are remarkably uniform in colour-pattern and genital structure, and the interspecific affinities are consequently difficult to assess. For example, *duplicata* is externally almost identical to *problematica*, but similarities in the male genitalia suggest a much closer relationship between *japonica* and *problematica* in spite of the external differences between the latter two species. There is, however, sufficient morphological evidence to suggest that particularly close affinities exist between *japonica*, *grisearia*, *agna*, *problematica*, *simillima*, *siccifolia*, *sumatrana*, *argenticips*, *recava*, *lilacina* and *ochrozona*.

In the following brief revision eight species have been transferred from *Albara* to *Nordstroemia* and one from *Drepana*, two new species are described and several names are relegated to synonymy. Sixteen species are now included in *Nordstroemia*. Except for *sachalinensis* Matsumura, the type of every nominal species and subspecies has been examined.

Distribution. N. India, Sikkim, N.E. Burma, China, Formosa (undescribed species), Japan, Malaya, Sumatra, and Java (undescribed species). The following species are known to occur in China : *vira*, *bicostata*, *japonica*, *agna*, *recava*, *duplicata* and *undata*. Twelve of the 16 species of *Nordstroemia* are endemic to the Indo-Chinese Subregion, *sumatrana* and *lilacina* are endemic to the Malayan Subregion, *grisearia* is restricted to the Manchurian Subregion, and *japonica* is shared by the Indo-Chinese and Manchurian Subregions. (See Table 1.)

Key to the Species

Males

1 Antemedial fascia and postmedial fascia of upper surface of fore wing lunulate, or if non-lunulate then sharply angled near costa 4
– Antemedial fascia and postmedial fascia of upper surface of fore wing non-lunulate, not angled near costa 2
2 Subterminal fascia of upper surface of hind wing either absent or represented by row of dark neural spots ; wing not pale yellow 5
– Subterminal fascia either absent on upper surface of hind wing, in which case wing is pale yellow except at anal margin, or represented by continuous pale line . 3
3 Subterminal fascia absent on upper surface of hind wing ; fore wing strongly falcate (Pl. 3, fig. 323) ; eighth sternite in male genitalia without eversible sacs laterally (Text-fig. 129) . . . . . ***bicostata*** (p. 74)
– Subterminal fascia on upper surface of hind wing represented by a continuous pale line ; fore wing weakly falcate (Pl. 3, fig. 322) ; eighth sternite in male genitalia with long eversible sac on either side . . . . . ***vira*** (p. 73)
4 Antemedial and postmedial fascia of upper surface of fore wing lunulate (Pl. 4, fig. 329) . . . . . ***undata*** (p. 90)
– Antemedial and postmedial fascia of upper surface not lunulate (Pl. 4, fig. 328) ***humerata*** (p. 90)
5 Ground-colour of upper surface of fore wing orange-bluff ; anterior half of hind wing without markings (Pl. 4, fig. 326) . . . . . ***siccifolia*** (p. 87)
– Ground-colour of upper surface of fore wing not orange-buff ; anterior third of hind wing without markings (e.g. Pl. 4, fig. 327) 6
6 Outer margin of fore wing angulate at Cu_{1a} (Pl. 4, fig. 327) . . ***recava*** (p. 84)
– Outer margin of fore and hind wing not angulate at Cu_{1a} 7

[*The remainder of the Key is based entirely on characters in the male genitalia.*]

7 Diaphragma with three short medial spines ; socius with short, non-arcuate, apical spine ; posterior margin of eighth sternite convex (Text-figs. 158–160) ***duplicata*** (p. 88)
– Diaphragma without medial spines ; socius with arcuate apical spine ; posterior margin of eighth sternite emarginate medially 8
8 Lateral spines of diaphragma extending inwards across medial line (Pl. 7, fig. 342) ***lilacina*** (p. 87)
– Lateral spines of diaphragma not extending across medial line 9
9 Socius with two arcuate apical spines (Pl. 10, fig. 353) . . . ***ochrozona*** (p. 88)
– Socius with single apical spine 10
10 Apical spine of socius longer than basal part of socius (Text-fig. 138) ***problematica*** (p. 77)
– Apical spine of socius shorter than basal part of socius 11
11 Anterolateral processes of diaphragma triangular, sharply pointed apically, directed inwards towards medial line (Pl. 6, fig. 339) . . . . ***sumatrana*** (p. 80)
– Anterolateral processes of diaphragma evenly rounded apically and inwardly directed (e.g. Pl. 8, fig. 347), or if not rounded then ventrally directed (Pl. 5, fig. 336) . 12
12 Anterolateral process of diaphragma evenly rounded apically 13
– Anterolateral process of diaphragma not rounded (Pl. 5, fig. 336) ***argenticeps*** (p. 77)
13 Genitalia as in Text-figs. 149–152 . . . . . ***grisearia*** (p. 84)
– Genitalia not as in Text-figs. 149–152 14
14 Genitalia as in Text-figs. 143–146 . . . . . ***japonica*** (p. 80)
– Genitalia not as in Text-figs. 143–146 15
15 Socius (omitting apical spine) over twice as long as broad; apical processes of uncus not widely divergent (Text-fig. 133) . . . . . ***agna*** (p. 75)
– Socius (omitting apical spine) less than twice as long as broad ; apical processes of uncus widely divergent (Pl. 8, fig. 347) . . . . . ***simillima*** (p. 87)

Nordstroemia vira (Moore) **comb. n.**

(Pl. 3, fig. 322 ; Pl. 5, figs. 333–335 ; Text-fig. 126)

Drepana vira Moore, [1866] : 817.
Drepana vira Moore ; Strand, 1911 : 201.
Drepana vira Moore ; Gaede, 1931 : 28.
Albara vira (Moore) Warren, 1922 : 470. [Good fig.]
Albara vira (Moore) ; Gaede, 1931 : 28.
Albara erpina Swinhoe, 1894 : 433. [Synonymized by Hampson, 1896 : 476.]
Albara gracillima Warren, 1897 : 12. **syn. n.**
Albara gracillima Warren ; Gaede, 1931 : 31.
Drepana ocellata Oberthür, 1916 : 375. **syn. n.**
Drepana ocellata Oberthür, 1917 : pl. 428. [Good fig.]
Albara ocellata (Oberthür) Gaede, 1933 : 169.
Albara mimetica Warren, 1922 : 470. [Good fig.]. **syn. n.**
Nordstroemia amabilis Bryk, 1943 : 13. [Good fig.]. **syn. n.**
Nordstroemia mimetica pallidina Bryk, 1943 : 14. [Good fig.]. **syn. n.**

The continuous pale subterminal fascia on both wings and the fact that veins R_1 and R_2 both arise from the areole in the fore wing distinguish *vira* from every other species of *Nordstroemia*. Similarly diagnostic are the long eversible sacs, placed one on either side of the eighth abdominal sternite in the male genitalia. Close affinities between *vira* and *bicostata* are suggested by the presence of whitish cell-spots on the surface of the fore wing, and by the similarities in the shape of the uncus and seventh abdominal sternite in the male genitalia.

Distribution. N.E. Burma, N. India, Sikkim and China (Szechwan, Fukien).

Material examined. Types. *vira*. The female type material of this species (' Darjeeling Coll. A. E. Russell ') has not been traced ; Horn and Kahle (1937 : 380) state that the Russell collection is lost. I therefore select as NEOTYPE a ♂ specimen in the BM(NH) labelled : Darjeeling ; Moore Coll. 94–106.

erpina. LECTOTYPE ♂, in the BM(NH), here selected, labelled : Kahsia Hs. [Assam, Khasia Hills] 94–66 [Swinhoe collection] ; *Drepana erpina* Swinhoe ♂ type.

gracillima. Holotype ♂, Khasis, Mar. 1895, Nat. Coll. ; Rothschild Bequest B. M. 1939–1 ; Drepanidae genitalia slide No. 751. In the BM(NH).

ocellata. Holotype ♀, Siao-Lou [China, Szechwan], 1903, Chasseurs indigènes du P. Déjean ; Drepanidae genitalia slide No. 753. In the BM(NH).

mimetica. LECTOTYPE ♂, in the BM(NH), here selected, labelled : Khasis, Nat. Coll. ; *Albara mimetica* Type ♂ Warr. [in Warren's handwriting] ; Rothschild Bequest B. M. 1939–1 ; Drepanidae genitalia slide No. 715.

amabilis. Holotype ♂, N.E. Burma, Kambaiti, 7000 ft., 10–21.iv. ; Drepanidae genitalia slide No. 714. In the Naturhistoriska Riksmuseet, Stockholm.

pallidina. Holotype ♂, N.E. Burma, Kambaiti, 2000 m., 9–17.vi. ; Drepanidae genitalia slide No. 713. In the Naturhistoriska Riksmuseet, Stockholm.

Other material. *BM(NH)*. India : 3 ♂, 1 ♀, Darjeeling, 7000 ft., 25–31.iii. 1924 ; 1 ♀, Naini-Tal, 6600 ft., 20.viii.1934 ; 6 ♂, 1 ♀, Khasis ; 1 ♂, Assam, Jainta Hills. Sikkim : 1 ♂, 1 ♀, 1887 (*Möller*). China : 3 ♂, 1 ♀, Fukien, Kuatun, 2300 m., 27° 40′ N, 117° 40′ E, 3.iv.–28.v.1938 (*Klapperich*) ; 1 ♂, [Szechwan]

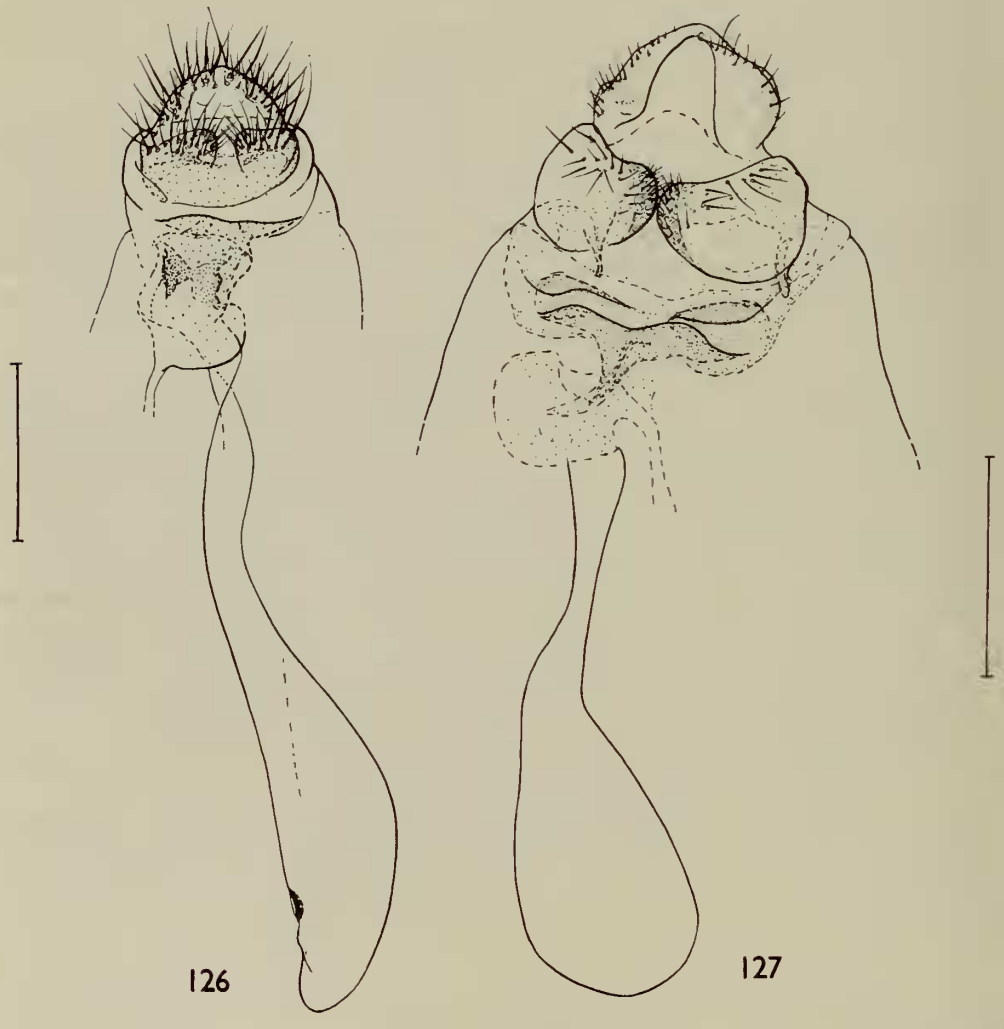
Kwanhsien, 18.vii.1925 ; 1 ♀, [Szechwan], Moupin, vi.1890. *Museum Koenig, Bonn.* China : 17 ex., Fukien, Kuatun, 2300 m., 27° 40′ N, 117° 40′ E (*Klapperich*).

Nordstroemia bicostata (Hampson) **comb. n.**

(Pl. 3, fig. 323 ; Text-figs. 127–132)

Drepana bicostata Hampson, 1912 : 1272.

This species is probably most closely related to *vira* but is readily separated from it by the shape and colour-pattern of the fore wing, the reduced fasciae in the hind



Figs. 126, 127. *Nordstroemia*, ♀ genitalia. 126, *vira* ; 127, *bicostata bicostata*, ♀.

wing, and by the genitalia in which the shape of the aedeagus, diaphragmal processes and valve processes are diagnostic.

Two subspecies are known : the nominate subspecies (India, Sikkim and Burma) and *opalescens* (China).

Nordstroemia bicostata bicostata (Hampson)

(Pl. 3, fig. 323 ; Text-figs. 127–130)

Albara bicostata (Hampson) ; Warren, 1922 : 470. [Pl. 49g as '*bicolorata*'.]
Albara bicostata (Hampson) ; Gaede, 1931 : 31.

Separable from *opalescens* by the shape of the medial part of the gnathus and the anterior processes of the diaphragma in the male genitalia.

Distribution. N. India, Sikkim and N. Burma.

Type. LECTOTYPE ♂, here selected, labelled : Sikkim, ix.1909, *F. Möller* ; Drepanidae genitalia slide No. 756. In the BM(NH).

Nordstroemia bicostata opalescens (Oberthür) **comb. n., stat. nov.**

(Text-figs. 131, 132)

Drepana opalescens Oberthür, 1916 : 375.
Drepana opalescens Oberthür, 1917 : pl.428. [Good fig.]
Drepana opalescens Oberthür, Gaede, 1931 : 27.
Albara opalescens (Oberthür) Gaede, 1933 : 169. [Fig.]

Distinguished from the nominate subspecies (q.v.) by the male genitalia (Text-figs. 131, 132).

Distribution. China (Szechwan).

Material examined. Type. LECTOTYPE ♂, here selected, labelled : Tien-Tsuen, 1897, ex. R. P. Déjean ; Drepana opalescens ♂ Obthr. ex Oberthür Coll. Brit. Mus. 1927–3 ; Drepanidae genitalia slide No. 757. In the BM(NH).

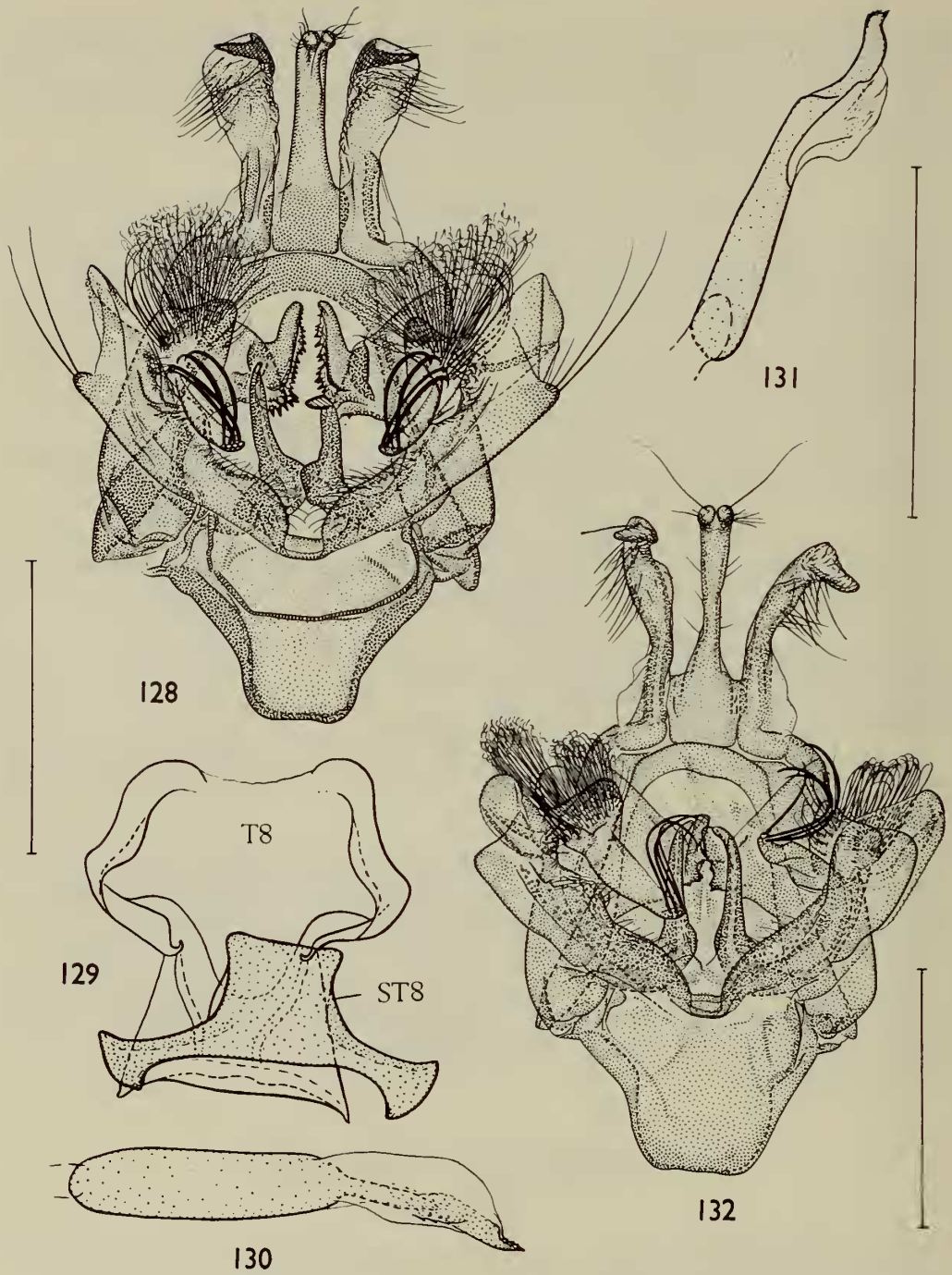
Paralectotype. *BM(NH)*. China : ♂, [Szechwan], Tien-Tsuen (*Déjean*).

Other material. *BM(NH)*. China, Szechwan : 1 ♂, Tien-tsuen, 1897 (*Déjean*) ; 1 ♂, 1 ♀, Kwanhsien, vii.1930 (*Franck*) ; 1 ♂, Kwanhsien, Omei, 10.vii.1929. *United States National Museum*. China : 1 ♂, Szechwan, Mt. Omei, Shin Kai Si, 4400 ft. ; 1 ♂, S. of Suifu.

Nordstroemia agna (Oberthür) **comb. n.**

(Text-figs. 133–137)

Drepana agna Oberthür, 1916 : 373.
Drepana agna Oberthür ; Oberthür, 1917 : pl. 428 (antemedial fascia on fore wing should be straight in this plate).
Drepana agna Oberthür ; Gaede, 1931 : 25.
Albara agna (Oberthür) Gaede, 1933 : 169.



FIGS. 128–132. *Nordstroemia*, ♂ genitalia. 128–130, *bicostata bicostata*. 128, ♂; 129, eighth tergite and sternite; 130, aedeagus. 131, 132, *bicostata opalescens*. 131, aedeagus; 132, ♂.

The female lectotype and a male specimen in the BM(NH) (possibly a paralectotype) differ from the externally similar *duplicata*, which also occurs in China, in that the antemedial and postmedial fascia on the upper surface of the wings is nearly uniformly brown, not edged strongly with buff. The male genitalia also separate *agna* and *duplicata*. The closest ally of *agna* is possibly *problematica* (type-locality N.E. Burma) which has a weakly arcuate antemedial fascia on the fore wing, more strongly marked antemedial and postmedial fasciae (the former edged proximally with buff, the latter edged distally with buff, then greyish brown) on both wings, and well-defined subterminal markings on the hind wing. The male and female genitalia of *agna* and *problematica* are diagnostic.

Distribution. China, Szechwan province.

Material examined. Type. I select as LECTOTYPE the ♀ syntype figured by Oberthür, labelled : Siao-Lou, 1900, Chasseurs indigènes ; *Drepana agna* ♀ Obthr. type ; Ex Oberthür Coll. Brit. Mus. 1927–3 ; Drepanidae genitalia slide No. 766. In the BM(NH).

Paralectotype. *BM(NH)*. China, Szechwan : 1 ♂, frontière orientale de Thibet, 1906 (*Déjean*).

Nordstroemia problematica (Bryk) comb. n.

(Text-figs. 138–142)

Albara problematica Bryk, 1943 : 19. [Good fig.]

Separable externally from the closely allied *agna* by the characters already listed under the latter species (q.v.). The chief diagnostic feature in the male genitalia is the long arcuate socius spine which is greater in length than the main part of socius. The colour-pattern of *argenticeps* (q.v.) differs little from that of *problematica* but the male genitalia show that the two species are probably not closely allied.

The type of *f. aestivalis* Bryk (1943 : 20) has been examined and found to be conspecific with the type of *problematica*.

Distribution. Northern Burma.

Material examined. Type. Holotype ♂, N.E. Burma, Kambaiti, 7000 ft., 5.viii. (*Malaise*) ; Drepanidae genitalia slide No. 739 ; in the Naturhistoriska Riksmuseet, Stockholm.

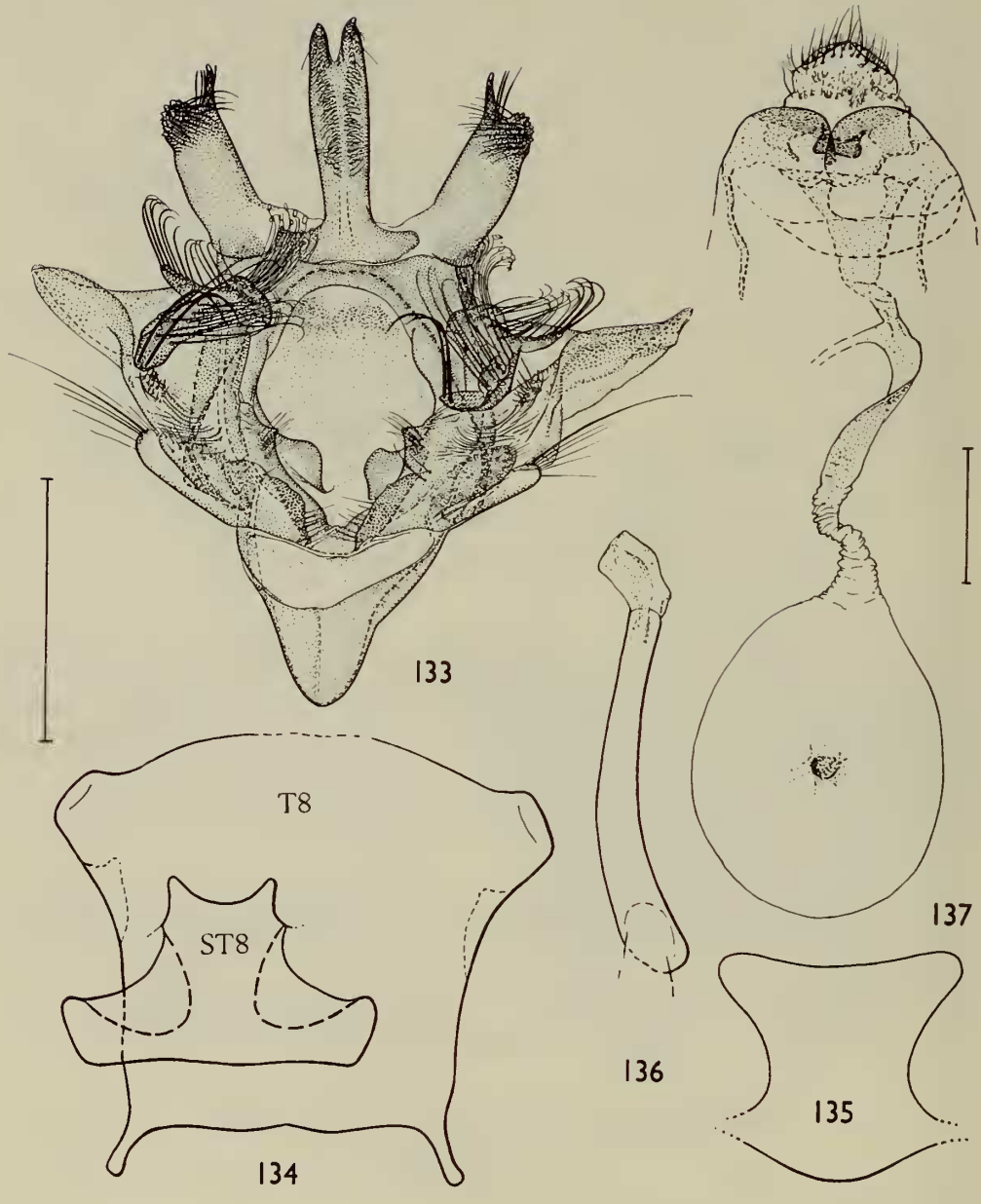
Other material. *BM(NH)*. Burma : 1 ♂, N.E. Burma, Kambaiti, 7000 ft., 4.iv.1934 (*Malaise*) ; 1 ♂, Upper Burma, Htawgaw, 6000 ft. (*Swann*).

Nordstroemia argenticeps (Warren) comb. n.

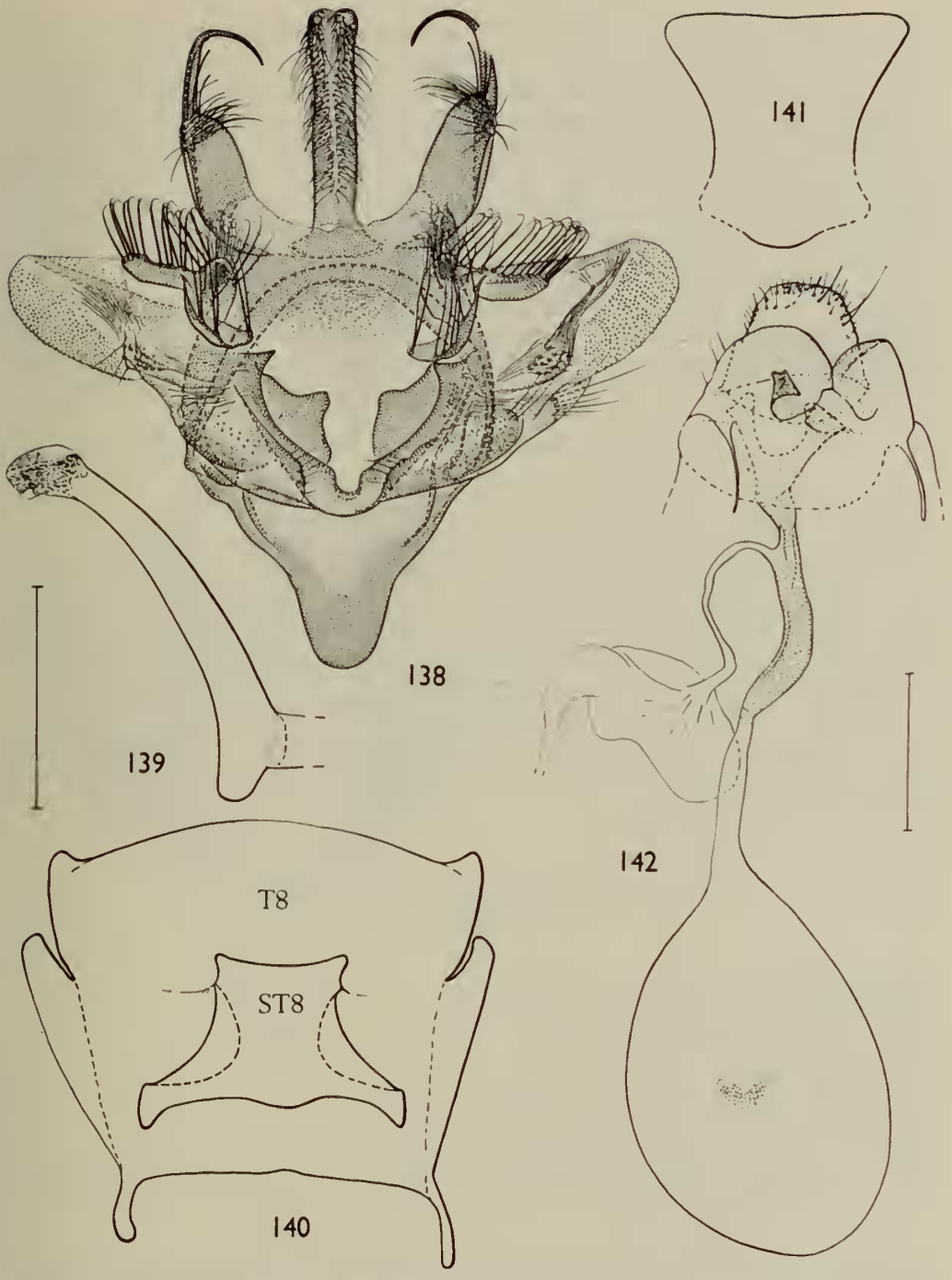
(Pls. 5, 6, figs. 336–338)

Albara argenticeps Warren, 1922 : 470. [Fig.]
Albara argenticeps Warren ; Gaede, 1931 : 31.

There is little external difference between this species and *sumatrana*, except in the shape of the postmedial fascia which is weakly sigmoid in *argenticeps* but straight



FIGS. 133–137. *Nordstroemia agna*, genitalia. 133, ♂ ; 134, ♂ eighth tergite and sternite ; 135, ♂ seventh sternite ; 136, aedeagus ; 137, ♀ (dorsal view).



FIGS. 138–142. *Nordstroemia problematica*, genitalia. 138, ♂ ; 139, aedeagus ; 140, ♂ eighth tergite and sternite ; 141, ♂ seventh sternite ; 142, ♀ (dorsal view).

or only weakly sigmoid in *sumatrana*. The male genitalia, which indicate close affinities with *problematica*, differ from the latter in the basally constricted socius and the ventrally directed processes of the lateral sclerites of the diaphragma. In comparison with *agna* the male genitalia of *argenticeps* are characterized chiefly by the more strongly developed spine at the base of the valve, the longer socius spine, the more strongly bifurcate uncus, and by the shape of the lateral processes of the vinculum which are directed ventrally and flattened laterally, not dorsoventrally, and are minutely spinose anteriorly.

Distribution. N.E. India.

Type. LECTOTYPE ♂, here selected, labelled: Khasis, Aug. 1895, Nat. Coll. ; *Albara argenticeps* Type ♂ Warr. ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 777. In the BM(NH).

Nordstroemia sumatrana (Roepke) **comb. n.**

(Pl. 4, fig. 325 ; Pls. 6, 7, figs. 339, 340, 344)

Allodrepana sumatrana Roepke, 1948 : 214. [Figs.]

Probably most closely allied to *argenticeps* which it resembles externally except for the more conspicuous subterminal markings and the straight or only slightly sigmoid antemedial fascia on the fore wing. In the male genitalia the socii are not constricted proximally and the processes of the lateral sclerites of the diaphragma are dorsoventrally flattened and inwardly directed.

Distribution. Sumatra, and probably Malaya (ex. in BM(NH)).

Type. Holotype ♀, S. Sumatra, Mt. Tanggamus, 2100 m., xii. 1934 (*Lieftinck* and *Toxopeus*) ; Drepanidae genitalia slide No. 1882. In the Rijksmuseum van Natuurlijke Historie, Leiden.

Nordstroemia japonica (Moore)

(Text-figs. 143–147)

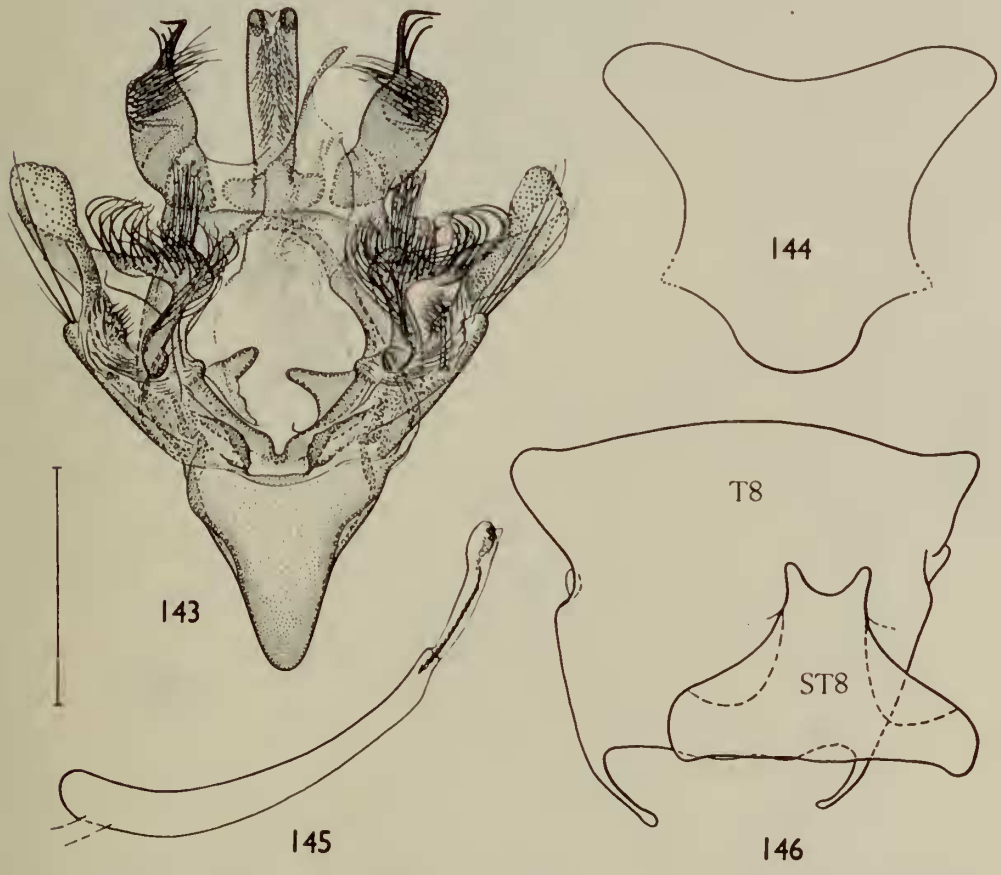
Drepana japonica Moore, 1877 : 94.
Drepana japonica Moore ; Strand, 1911 : 201.
Drepana japonica Moore ; Gaede, 1931 : 26.
Albara japonica (Moore) Warren, 1922 : 469.
Albara japonica (Moore) ; Inoue, 1956a : 663.
Albara japonica (Moore) ; Inoue, 1956 : 368.
Albara japonica (Moore) ; Inoue, 1959 : 175. [Good fig.]
Nordstroemia japonica (Moore) Inoue, 1962 : 27. [Good figs., including genitalia.]
Albara sachalinensis Matsumura, 1921 : 943. [Synonymized by Inoue (1956a).] [A syntype of each sex of ab. *punctifera* Strand (1911 : 201) has been examined and found to be conspecific with the type of *japonica*.]

This species is possibly not separable externally from *grisearia*, to which it is closely allied, but can be distinguished by the shape of the lateral diaphragmal lobes, the socii, uncus and aedeagus in the male genitalia, and by the shape of the dorsal

invagination of the eighth tergum and the degree of sclerotization of the ductus bursae in the female.

Distribution. Japan and China (Hunan, Szechwan).

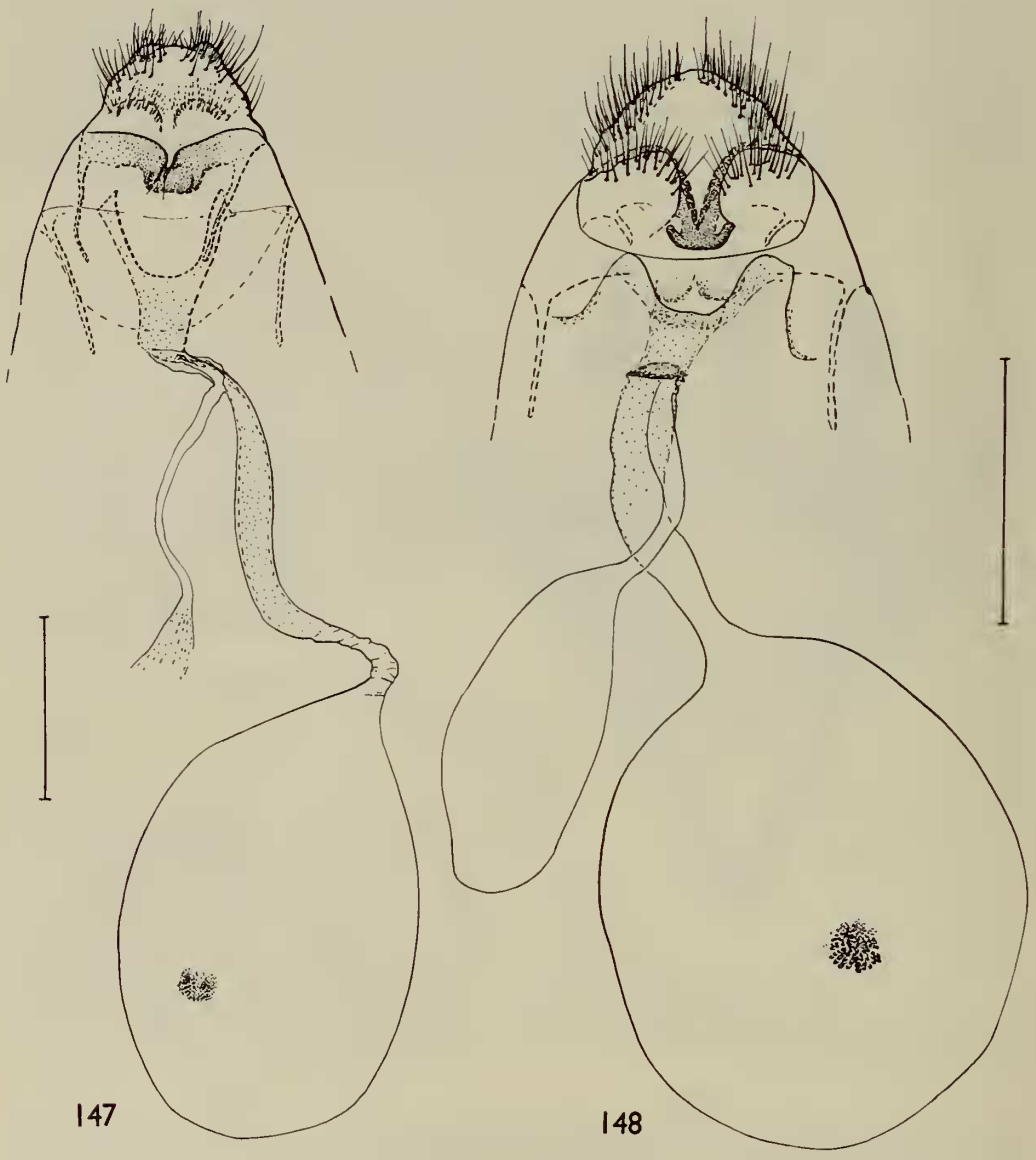
Material examined. Types. *japonica*. I select as LECTOTYPE of *japonica* a ♀ [*ex* Pryer Coll.] in the BM(NH) labelled : Japan, 80–125 ; *Drepana japonica* Moore Type [all except ' Type ' probably in Moore's handwriting] ; Drepanidae genitalia slide No. 762. This specimen agrees exactly in wing-span with the figure given by Moore (1877). Although it bears no Pryer collection label, the figures ' 80–125 ' [B. M. registration No. 1880–125] provide evidence that the lectotype was at one time housed in the Pryer collection. Reference to the entry 1880–125 shows that the specimens registered here are not Lepidoptera and were not taken in Japan. However, two entries above 1880–125 is the entry 1880–123 ; the specimens registered here are Lepidoptera from the Pryer collection taken at Shanghai, the source



FIGS. 143–146. *Nordstroemia japonica*, ♂ genitalia. 143, ♂ ; 144, seventh sternite ; 145, aedeagus ; 146, eighth tergite and sternite.

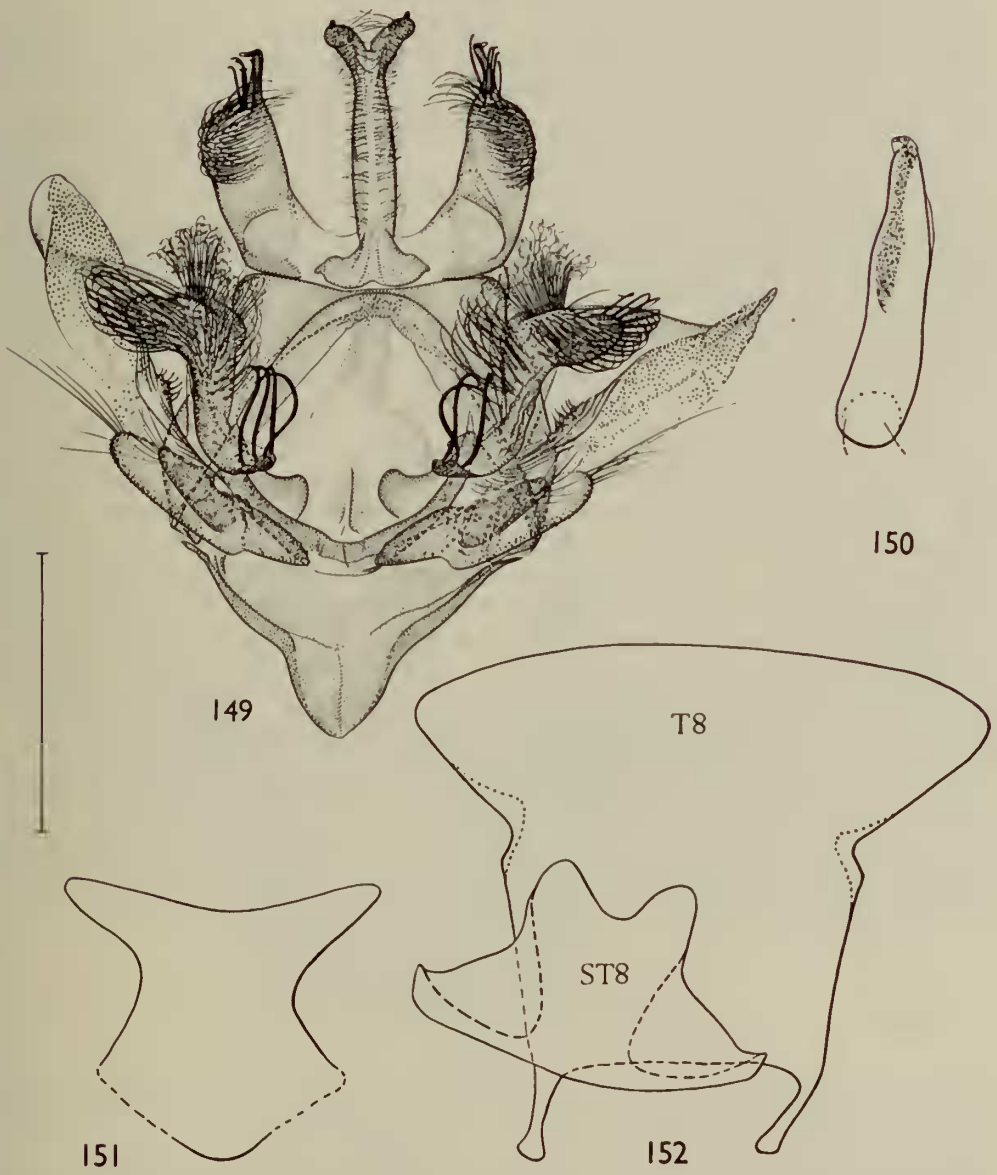
of the majority of the material described by Moore in the paper where *japonica* is described. It is reasonable to infer from this that the figures 1880–125 which occur on the first of the lectotype labels should read 1880–123 and that this specimen is part of the original syntypic material from the Pryer collection.

sachalinensis. [Type material, Japan, Sakhalin ; presumably in Hokkaido University ; not seen.]



FIGS. 147–148. *Nordstroemia*, genitalia. 147, *japonica*, ♀ ; 148, *grisearia*, ♀.

Other material. *BM(NH)*. JAPAN : numerous examples. CHINA : 1 ♂, Hunan, Hoeng-Shan, 900 m., 19.v.1935 (*Höne*) ; 1 ♀, C. China, Nanjang ; 1 ♂, Szechwan, Ta-tsien-lou, 1897 (*Déjean*). *Museum Koenig, Bonn*. CHINA : 2 ex., Hunan, Hoeng-Shan, 900 m. (*Höne*). JAPAN : 3 ex.



FIGS. 149–152. *Nordstroemia grisearia*, ♂ genitalia. 149, ♂ ; 150, aedeagus ; 151, seventh sternite ; 152, eighth tergite and sternite.

Nordstroemia grisearia (Staudinger) **comb. n.**

(Text-figs. 148–152)

Drepana grisearia Staudinger, 1892 : 335. [Poor fig.]
Drepana grisearia Staudinger ; Strand, 1911 : 202. [Poor fig.]
Drepana grisearia Staudinger ; Gaede, 1931 : 26.

Since its description in 1892, this species has been known only from the female holotype. Recently examined material from S.E. Russia and from Japan has been compared with the holotype, and the male identified.

In coloration and colour-pattern there is little difference between this species and the common Japanese species *japonica* Moore. The only apparent external difference in colour-pattern is in the subterminal fascia on the fore wing, which is absent in all except one of the specimens of *grisearia* examined but present as faint neural dots in nearly all the available *japonica* material. However, several features in the male and female genitalia serve to distinguish *grisearia* from *japonica* (see list of these under *japonica*). The extent of these morphological differences are sufficient to justify specific separation of *grisearia* and *japonica*.

Distribution. Russia (Amur region and Vladivostok) and Japan (two localities, Usui Pass and Chuzenyi, in central Japan, both at an altitude of approximately 1000 metres). The range of *grisearia* was presumably once much more extensive in Japan than at the present, permitting genetic interchange with the Russian populations. Extinction must then have occurred leaving isolated populations of *grisearia* in Japan. This is the pattern of distribution for which Kurentzov (1961) postulates a Pleistocene origin. Possible hybridization with the closely allied and probably monophyletic *japonica* may be prevented by the different times of emergence of the imago which in *grisearia* appears in June, at least in the Amur region (Staudinger, 1892), and in *japonica* appears in April–May and July–September (Inoue, 1962).

Material examined. Type. Holotype ♀, S.E. Russia, Amur R., Raddefka ; Drepanidae genitalia slide No. 731. In the Zoologisches Museum, Berlin.

Other material. *Museum Koenig, Bonn.* Japan : 1 ♂, Japan, Chuzenyi, 13.ix.1928. *BM(NH).* Japan : 1 ♂, Chuzenyi, 10.ix. ; 1 ♂, Central Japan, Kôtzuke, Usui-toge, [Central Honshu, Gumma Pref., Usui Pass, 950 m.] mid Aug. 1923 (*Sugitani*). *Zoological Institute, Leningrad.* Russia : 2 ♂, Vladivostok, 8.iii.1914, 13.vi.1916 (*Kriger-Voinovsky*).

Nordstroemia recava **sp. n.**

(Pl. 4, fig. 327 ; Text-figs. 153–157)

♂, ♀. Palp orange-buff ; vertex of head dark brown, front paler brown ; antennae bipectinate to just over half its length in male, filiform in female, proximal half of antennal shaft very dark brown and brilliantly lustrous dorsally ; collar orange-buff.

Thorax speckled with greyish white and pale grey-brown dorsally, pale buff ventrally. Colour-pattern of both wings as in Pl. 4, fig. 327 ; ground-colour of both wings pale lustrous grey, densely irrorate with layer of longer scales the latter pale greyish brown at base and greyish white distally ; costa orange-buff ; apical part of outer margin and costal patches

dark brown ; fascia yellowish brown with yellow distal border to postmedial fascia, and yellow proximal border to antemedial fascia ; trace of subterminal spot present on posterior veins in some specimens. Under surface of both wings moderately lustrous ; ground-colour pale dull yellow, sometimes slightly greyish basally on hind wing ; both wings with trace of greyish yellow postmedial fascia ; costa of fore wing orange-buff ; fringe of outer margin dark brown apically.

Legs pale yellow, but with outer surface of prothoracic and mesothoracic legs greyish brown (prothoracic legs the darkest).

Dorsal surface of abdomen as for ground-colour of wings anteriorly ; pale yellowish grey posteriorly ; with yellowish brown band on posterior margin of third segment. Ventral surface as for ground-colour of hind wing.

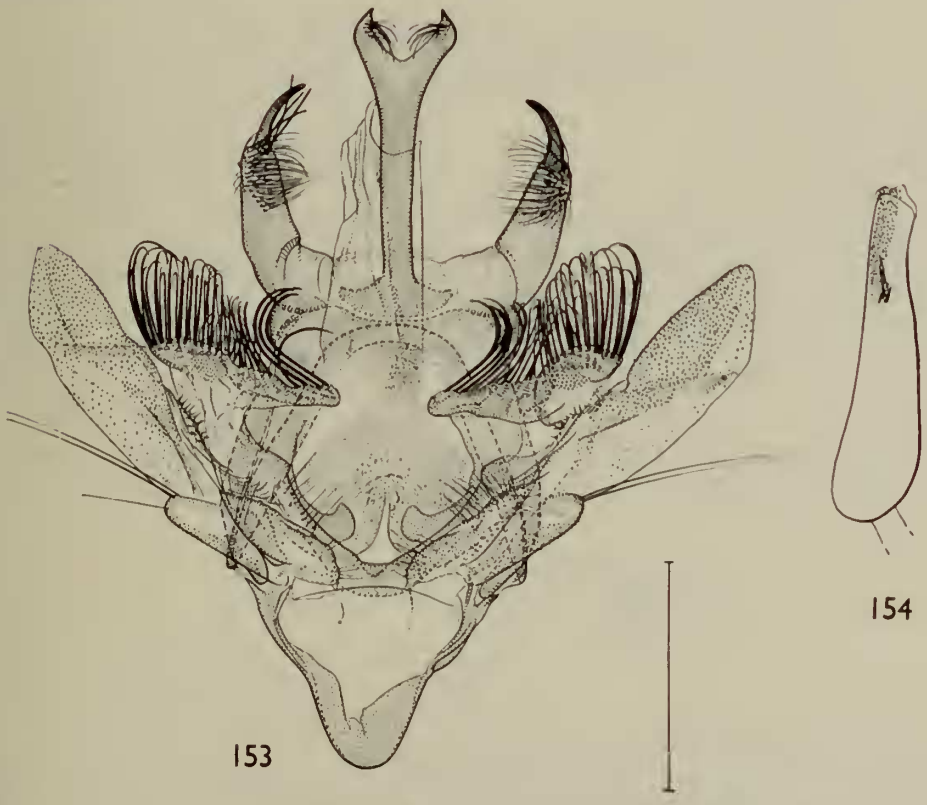
♂ genitalia as in Text-figs. 153, 154, 156, 157.

♀ genitalia as in Text-fig. 155.

Wing. ♂ 15·5–19·5 mm. (8) ; ♀ 18·0–18·5 mm. (3).

Easily distinguished from its close allies, *problematica*, *agna* and *japonica*, by the distinctive pre-apical emargination of the outer margin of the fore wing. The male and female genitalia are also diagnostic. In the male, the shape of the uncus and socii are particularly characteristic.

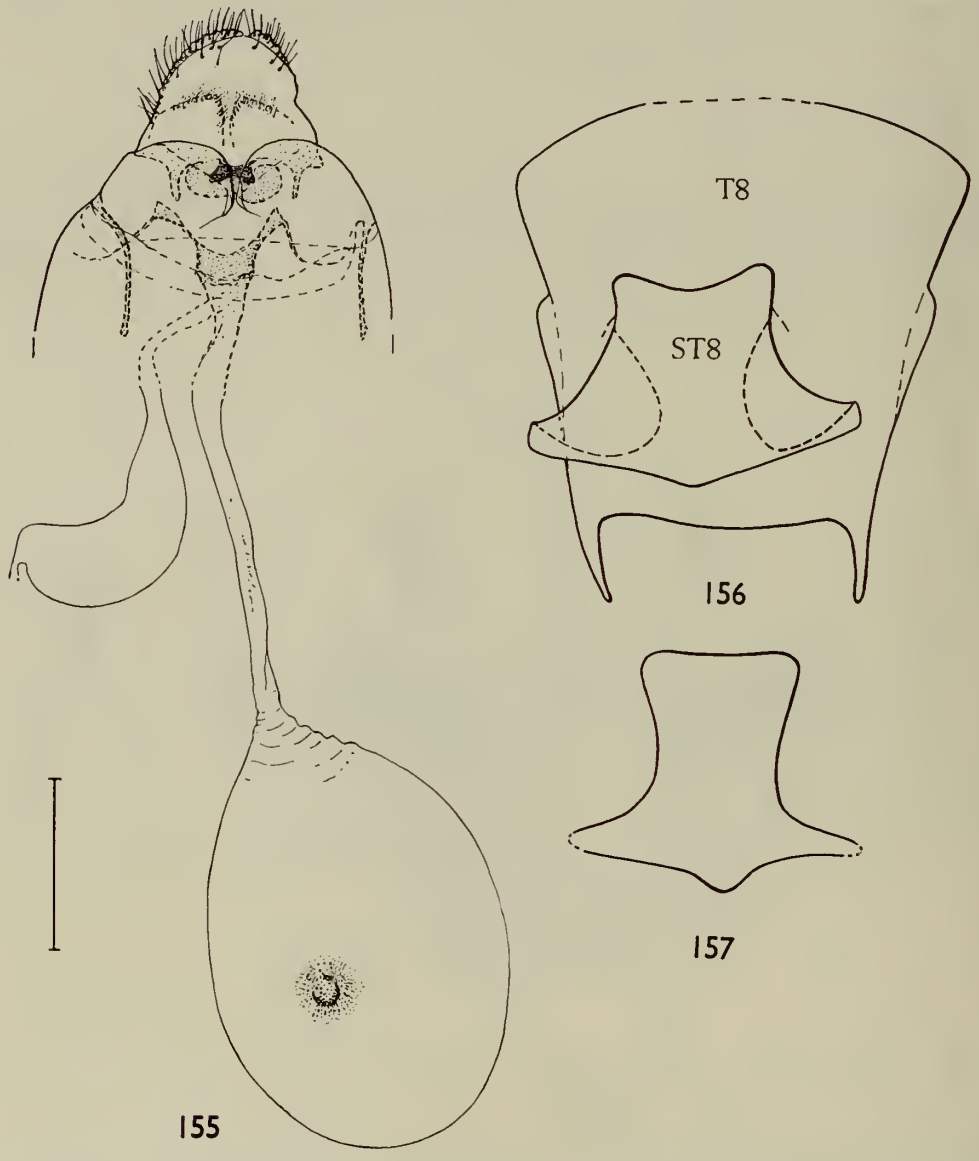
Distribution. China (Chekiang, Kiangsu).



FIGS. 153, 154. *Nordstroemia recava*, genitalia. 153, ♂ ; 154, aedeagus.

Holotype ♂. China : Chekiang, E. Tien-mu-Shan, 21.v.1931 (*Höne*) ; Drepanidae genitalia slide No. 772. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 2 ♂, 1 ♀, Chekiang, E. Tien-mu-Shan, 21, 22.v.1931 (*Höne*) ; 2 ♂, Kiangsu Lungtan b. Nanking, 9,10.ix.1918 (*Höne*) ; 3 ♂, 2 ♀ Kuling, vii.1921. *Daniel collection, Munich.* China : 1 ♂, Chekiang, W. Tien-mu-shan, 1600 m., 21.v.1932 (*Höne*).



Figs. 155–157. *Nordstroemia recava*, genitalia. 155, ♀ (dorsal view) ; 156, ♂ eighth tergite and sternite ; 157, ♂ seventh sternite.

Nordstroemia lilacina (Moore) comb. n.

(Pls. 7, 9, figs. 341, 342, 351)

Drepana lilacina Moore, 1888 : 401.
Albara lilacina (Moore) Warren, 1922 : 469.
Albara lilacina (Moore) ; Gaede, 1931 : 32.

The affinities of this species are uncertain. It is externally closest to *simillima* (another large pale buff or pale greyish buff species) from which it can be distinguished by the dark yellowish brown antemedial and postmedial fasciae (sometimes edged with buff and greyish brown) on the upper surface of the fore wing, and also by the fact that the subterminal markings on the fore wing are best developed in the middle of the wing, not at the apex. The two long, robust, arcuate, overlapping spines of the lateral diaphragmal sclerites characterize the male genitalia.

An examination of a pair of syntypes of *olivacea* ab. *pallidior* Warren (1922 : 469, good figs.) has shown them to be conspecific with the type of *lilacina*.

Distribution. N.E. and N.W. India.

Type. I select as LECTOTYPE a ♂ syntype in the BM(NH), labelled : Dharmsala 83.26 ; *Drepana lilacina* ♂ type Moore ; Drepanidae genitalia slide No. 778.

Nordstroemia simillima (Moore) comb. n.

(Pls. 7, 8, figs. 343, 347, 348)

Drepana simillima Moore, 1888 : 402.
Albara simillima (Moore) Warren, 1922 : 469. [Fig.]
Albara simillima (Moore) ; Gaede, 1931 : 33.

This species is externally similar to *lilacina* with which it is sympatric. It is separable from *lilacina* by the brownish white fasciae (edged faintly with pale brown) on the upper surface of the fore wing, and by the markings of the subterminal fascia on the fore wing which, when present, are most strongly marked in the anterior half of the wing. The male genitalia, however, indicate closer relationships with *agna*, *problematica*, *japonica*, *recava* but more particularly with *siccifolia*.

Distribution. N.W. India.

Type. I select as LECTOTYPE a ♂ syntype in the BM(NH), labelled: Dharmsala 83.25 ; *Drepana simillima* ♂ type Moore ; Drepanidae genitalia slide No. 779.

Nordstroemia siccifolia (Roepke)

(Pl. 4, fig. 326 ; Pls. 8, 9, figs. 345, 346, 352)

Allodrepana siccifolia Roepke, 1948 : 214. [Fig.]
Nordstroemia siccifolia (Roepke) Inoue, 1962 : 27.

The affinities of this species are uncertain, but it is possibly most closely related to *simillima* from which it is distinguished by the orange-buff ground-colour of the upper surface of the wings, by the dark brown proximal edge to the postmedial fascia on the fore wing, and by the presence of three well-defined spots at the distal

end of the cell. The male genitalia are also diagnostic (particularly the uncus and the broad lateral lobes of the diaphragma).

Distribution. Sumatra.

Type. Holotype ♂, S. Sumatra, Mt. Tanggamus, 2100 m., 11.vii.1934 (*Toxopeus*).

Nordstroemia ochrozona (Bryk) comb. n., stat. n.

(Pls. 9, 10, figs. 349, 353, 354)

Albara duplicata ochrozona Bryk, 1943 : 20. [Good fig.]

This species is probably indistinguishable externally from *duplicata*, but is not closely allied to it. The affinities of *ochrozona* are uncertain : it is separable from the rest of the genus by the hammer-shaped lateral process of the diaphragma and by the presence of two arcuate spines, curved in places at right-angles to each other at the apex of the socius.

Distribution. N.E. Burma.

Type. Holotype ♂, N.E. Burma, Kambaiti, 7000 ft., 10.iv.1934 (*Malaise*) ; Drepanidae genitalia slide No. 717. In Naturhistoriska Riksmuseet, Stockholm.

Nordstroemia duplicata (Warren) comb. n.

(Pl. 4, fig. 324 ; Text-figs. 158–160)

Albara duplicata Warren, 1922 : 469. [Published simultaneously with *olivacea* Warren ; here selected as the senior synonym.]
Albara duplicata Warren ; Gaede, 1931 : 31.
Albara olivacea Warren, 1922 : 469. **syn. n.**
Albara olivacea Warren ; Gaede, 1931 : 32.

Separable from *agna*, which also occurs in China and has a similar colour-pattern, by the buff-edged antemedial and postmedial fascia on the upper surface of the wings and by the distinctive male genitalia. Although *duplicata* is almost identical externally to *problematica* and *ochrozona* (both described from N.E. Burmese material) and not significantly unlike *agna*, *japonica*, *argenticeps* and other species of this group (see under generic description), the male genitalia of *duplicata* are remarkably different from these species (Text-figs. 158–160), especially in the shape of socii and uncus and the spinose diaphragma.

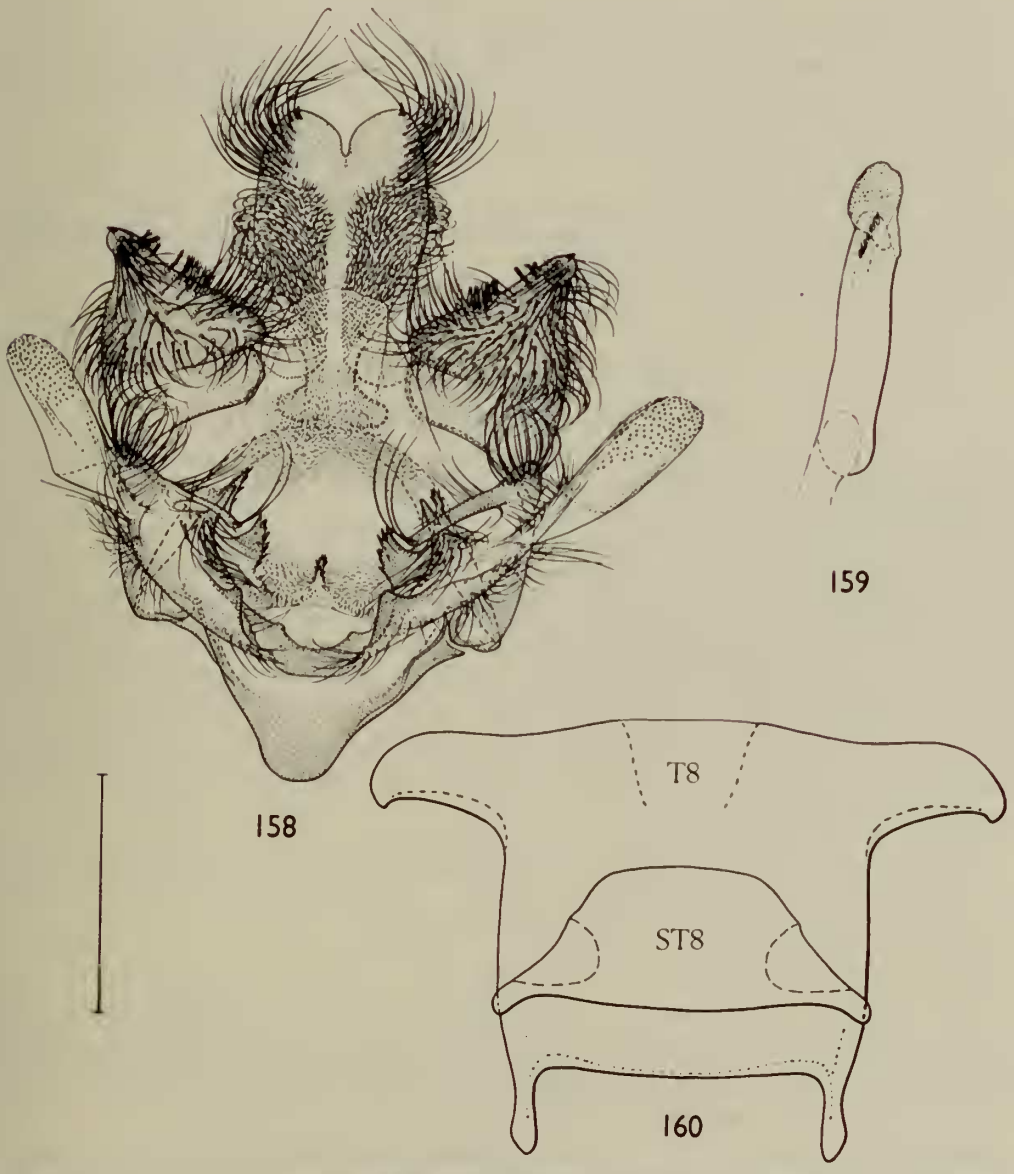
Warren's description of *olivacea* was based on specimens differing from the type material of *duplicata* in that the ground-colour of the upper surface of the wings was ' olive grey ' [now faded to pale buff], contrasting with the ' lilac grey ' [now pale grey] of *duplicata*. The syntypes of *olivacea* ab. *pallidior* have been shown to be conspecific with the type of *lilacina* (q.v.).

Distribution. N.E. India, China (Chekiang and possibly Yunnan).

Material examined. Types. *duplicata*. LECTOTYPE ♂, here selected, labelled: Khasis, Nat. Coll. ; Coll. H. J. Elwes ; *Albara duplicata* Type ♂ Warr. ; Rothschild Bequest B. M. 1939–1 ; Drepanidae genitalia slide No. 718 ; B. M. negative No. 29113. In the BM(NH).

olivacea. LECTOTYPE ♂, here selected, labelled : Khasis, Mar. 1895, Nat. Coll. ; *Albara olivacea* Type ♂ Warr. ; Rothschild Bequest B. M. 1939–1 ; Drepanidae genitalia slide No. 764. In the BM(NH).

Other material. *Museum Koenig, Bonn*. CHINA : 1 ♂, Chekiang ; 1 ♀, N. Yunnan (doubtfully identified).



FIGS. 158–160. *Nordstroemia duplicata*, ♂ genitalia. 158, ♂ ; 159, aedeagus ; 160, eighth tergite and sternite.

Nordstroemia humerata (Warren) **comb. n.**

(Pl. 4, fig. 328; Pls. 9, 10, figs. 350, 355, 356)

Albara humerata Warren, 1896 : 335.
Albara humerata Warren ; Warren, 1922 : 470. [Fig.]
Albara humerata Warren ; Gaede, 1931 : 31.

This species is readily separable from the other species of *Nordstroemia* by the small size, the weakly falcate fore wings, the distinctive colour-pattern of the wings (see plate in Warren, 1922) and by the simple unbranched socii and uncus in the male genitalia. The affinities of *humerata* within *Nordstroemia* are doubtful, though its present generic placement is probably correct.

Distribution. N.E. India.

Type. LECTOTYPE ♂, here selected, labelled : Khasis, Sept. 1895, Nat. Coll., *Albara humerata* Type ♂ Warr. ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 1670. In the BM(NH).

Nordstroemia undata **sp. n.**

(Pl. 4, fig. 329 ; Text-figs. 161–164)

♂. Outer surface of palp, front of head, and pectinations and base of antenna reddish brown ; rest of antenna and patch posterior to base of antenna buff ; patch between antennae, posterior margin of vertex and collar very pale buff.

Thorax buff. Colour-pattern of upper surface as in Pl. 4, fig. 329. Ground-colour of upper surface of fore wing buff, slightly darker apically ; medial fasciae and cell-spots darker buff, subterminal fascia dark brown ; outer margin edged with orange-buff ; fringe dark brown. Hind wing brownish white on upper surface ; trace of postmedial and subterminal fascia at anal margin in some specimens, discocellular spot of under surface usually showing through wing. Under surface of fore wing buff, more brownish apically, at base and along costa ; with dark brown discocellular spot, trace of spot at posterior angle of cell, and trace of anterior part of postmedial fascia ; outer margin and fringe as for upper surface. Under surface of hind wing pale buff irrorate with brownish buff distally and anteriorly ; usually with faintly marked brownish buff postmedial fascia ; cell-spots as for fore wing. Legs pale buff with outer surface of prothoracic leg darker buff.

Abdomen brownish white.

♂ genitalia as in Text-figs. 162–164. Diaphragma with very weakly developed lateral sclerites ; seventh abdominal sternum unmodified.

♀. As for male but with filiform, sparsely ciliate antennae.

♀ genitalia as in Text-fig. 161.

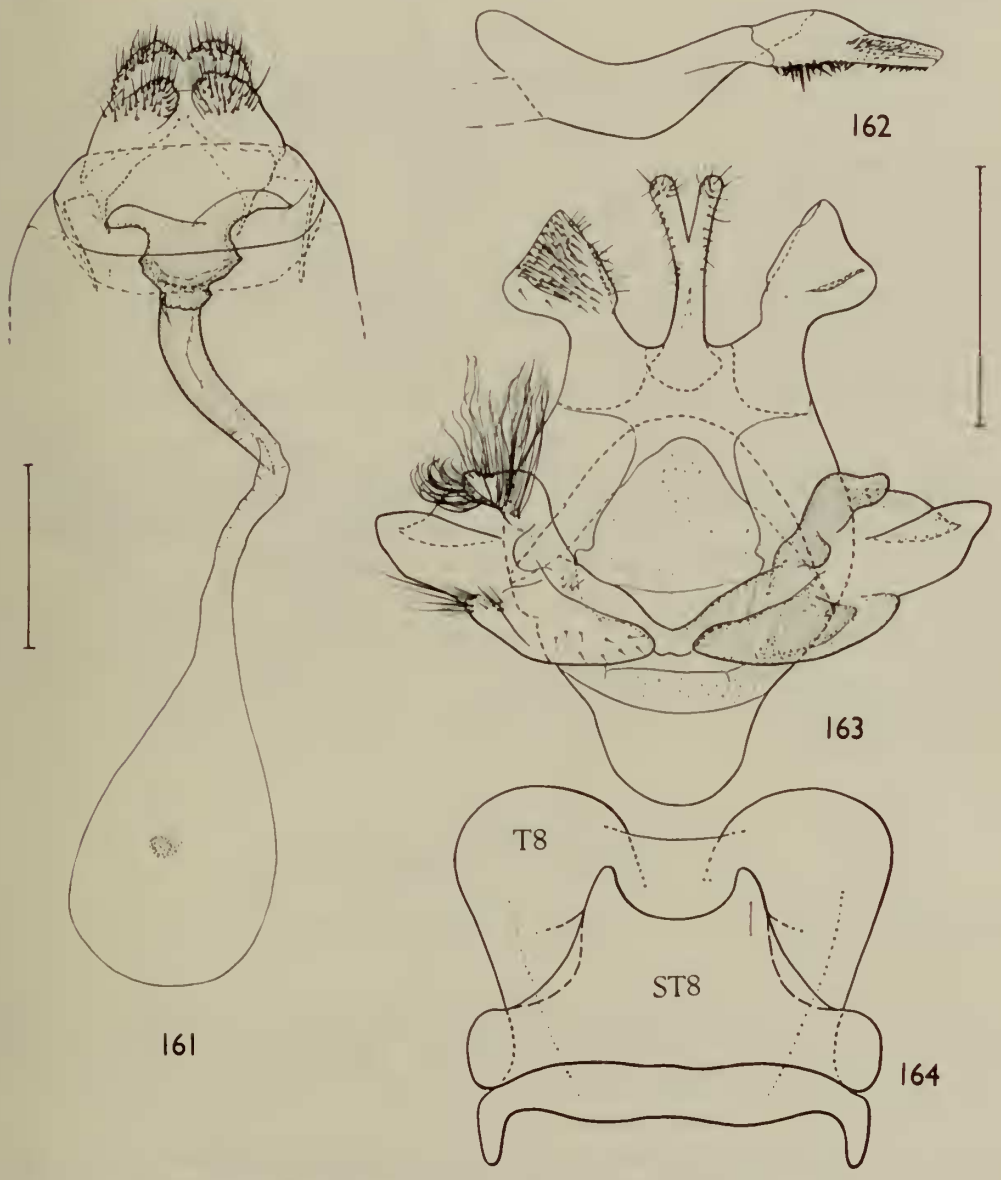
Wing. ♂ 17·0–19·5 mm. (8) ; ♀ 17·5–21·0 mm. (17).

Readily distinguished from the rest of the genus by the very distinctive colour-pattern, *undata* has been placed in *Nordstroemia* because of general generic resemblances in the male and female genitalia. It is, however, clearly much less closely allied to the type-species than the remaining species of *Nordstroemia*.

Holotype ♂. China : N. Yunnan, Likiang, 22.vi.1935 (*Höne*) ; Drepanidae genitalia slide No. 975. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 1 ♂, 5 ♀ N. Yunnan, A-tun-tse,

7.vii–11.vii.1936, 30.vii.1937 (*Höne*) ; 9 ♂, 14 ♀, N. Yunnan, Likiang, 1.vii–30.ix. 1935 (*Höne*). *Daniel Collection, Munich.* CHINA : 2 ♂, 2♀, N. Yunnan, 29.v–3.vii.1935, 16.vii.1936 (*Höne*). *BM(NH).* CHINA : 1 ♂, N. Yunnan, A-tun-tse, 7.vii.1936 (*Höne*) ; 2 ♂, 2 ♀, N. Yunnan, Likiang, 25.vi–26.vii.1935 (*Höne*).



FIGS. 161–164. *Nordstroemia undata*, genitalia. 161, ♀ ; 162, aedeagus ; 163, ♂ ; 164, ♂ eighth terigte and sternite.

DIDYMANA Bryk

Didymana Bryk, 1943 : 10. Type-species *Didymana renei* Bryk, 1943 : 10, by monotypy.

The affinities of this genus are doubtful, but it is possibly most closely related to *Palaeodrepana* Inoue, especially to *Palaeodrepana harpagula* (Esper). *Didymana* is monotypic.

Didymana bidens (Leech) **comb. n.**

(Pl. 11, fig. 357 ; Text-figs. 165–169)

Drepana bidens Leech, 1890 : 113.
Drepana bidens Leech ; Strand, 1911 : 202. [Fig.]
Didymana renei Bryk, 1943 : 10. [Good fig.] **syn. n.**

Readily distinguished from *Palaeodrepana harpagula* (Esper) (p. 94), to which it is possibly most closely related, by the colour-pattern (see Strand, 1911 and Bryk, 1943) and the genitalia (Text-figs. 65–69). The shape of the seventh sternite and the eighth tergite in the male are particularly diagnostic.

Distribution. China (Hupeh, Szechwan, Yunnan, Shensi, Fukien) and N.E. Burma.

Material examined. Types. *bidens*. Holotype ♂, [China, Hupeh], Chang Yang, vii.1888 (*Pratt*) ; Drepanidae genitalia slide No. 82. In the BM(NH).

renei. Holotype ♂, N.E. Burma, Kambaiti, 2000 m. ; Drepanidae genitalia slide No. 734. In the Naturhistoriska Riksmuseet, Stockholm.

Other material. *BM(NH)*. China : 6 ex., Szechwan. N.E. Burma : 14 ex. *Museum Koenig, Bonn*. China : 29 examples from S. Shensi, Fukien and N. Yunnan. *Naturhistoriska Riksmuseet, Stockholm*. N.E. Burma : 11 ♂ paratypes of *renei*, Kambaiti, 2000 m., 14.iv–14.vi.1934. *U.S. National Museum*. China : 1 ♂, 2 ♀, Szechwan.

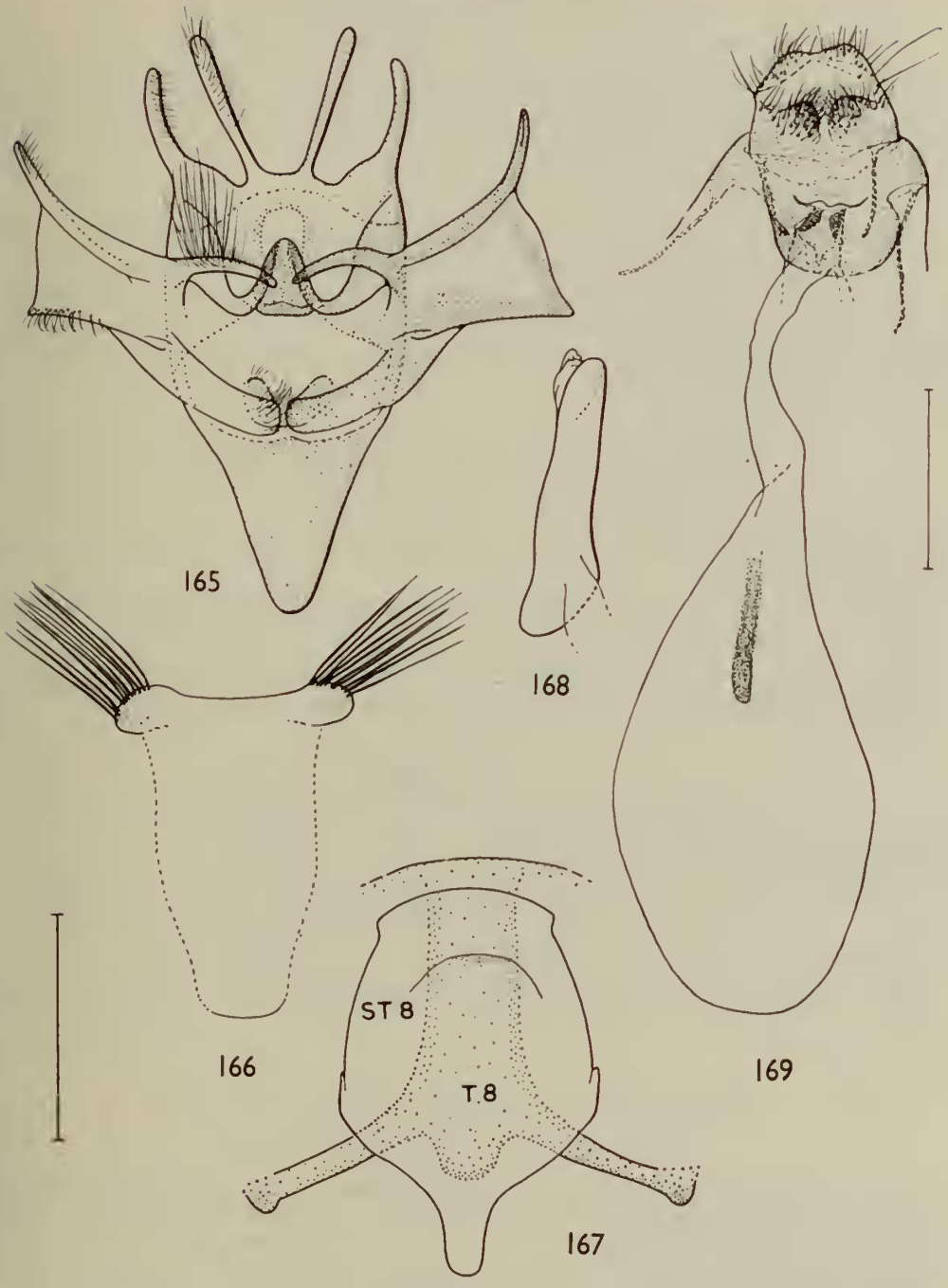
PALAEODREPANA Inoue

(Pl. 4, figs. 330–332 ; Text-figs. 170–182)

Palaeodrepana Inoue, 1962 : 21. Type-species *Bombyx harpagula* Esper, [1786] : 373, by original designation.

Inoue established this genus for three species : *harpagula*, *binaria* Hufnagel (1769 : 516) and *cultraria* Fabricius (1775 : 621). Of these only *harpagula* is known to occur in China—it is also represented in Britain and much of the western part of the Palaearctic Region, a range matched only by *Drepana curvatula* Borkhausen.

The closest ally of *Palaeodrepana*, more particularly of *harpagula*, is possibly *Didymana* Bryk on the evidence of external and genitalic similarities. The species *binaria* and *cultraria* may not be properly placed in *Palaeodrepana* and merit further study in this respect.



FIGS. 165–169. *Didymana bidens*, genitalia. 165, ♂ ; 166, ♂ seventh sternite ; 167, ♂ eighth tergite and sternite ; 168, aedeagus ; 169, ♀.

Palaeodrepana harpagula (Esper)

(Pl. 4, figs. 330–332 ; Text-figs. 170–182)

Bombyx harpagula Esper, [1786] : 373. [Good figs.]
Bombyx harpagula Esper ; Hübner, [1803] : pl. 11, fig. 41 [labelled ' sicula ' in error] ; [1809] : 113 [including reference to pl. 11, fig. 41 as figuring *harpagula*].
Drepana harpagula (Esper) Gaede, 1931 : 23.
Palaeodrepana harpagula (Esper) Inoue, 1962 : 22.

Distinguished from the other two species of this genus by the shape and colour-pattern of the wings and by the male genitalia (see Plate and Text-figs.).

Distribution. Occurs in most of the temperate parts of the Palaearctic Region and in Oriental China. Four subspecies are known : the nominate subspecies (Europe, S.E. Russia, China), *olivacea* (Japan) *emarginata* (China), and *bitorosa* (China).

Palaeodrepana harpagula harpagula (Esper)

(Pl. 4, fig. 331 ; Text-figs. 170–174)

Distinguished from the other three subspecies by the shape of the wings and the genitalia of both sexes.

Distribution. Known from most European countries, and also from S.E. Russia and from the Chinese province of Manchuria (material in the BM(NH)).

Type. Holotype ♀, Germany, Frankfurt. Probably lost : there are no specimens of *harpagula* in the Esper collection in the Zoologische Sammlung, Munich.

Palaeodrepana harpagula olivacea (Inoue)

Drepana harpagula olivacea Inoue, 1958 : 12.
Palaeodrepana harpagula olivacea (Inoue) Inoue, 1962 : 23. [Good figs.]

A description and comparison of this subspecies is given by Inoue (1958) and (1962).

Distribution. Known from most parts of Japan (see Inoue, 1962).

Type. Holotype ♂, Japan, Takao-san, Toyko, 2.vii.1949 (*Inoue*). In Inoue collection.

Palaeodrepana harpagula emarginata ssp. n.

(Pl. 4, figs. 332 ; Text-figs. 179–182)

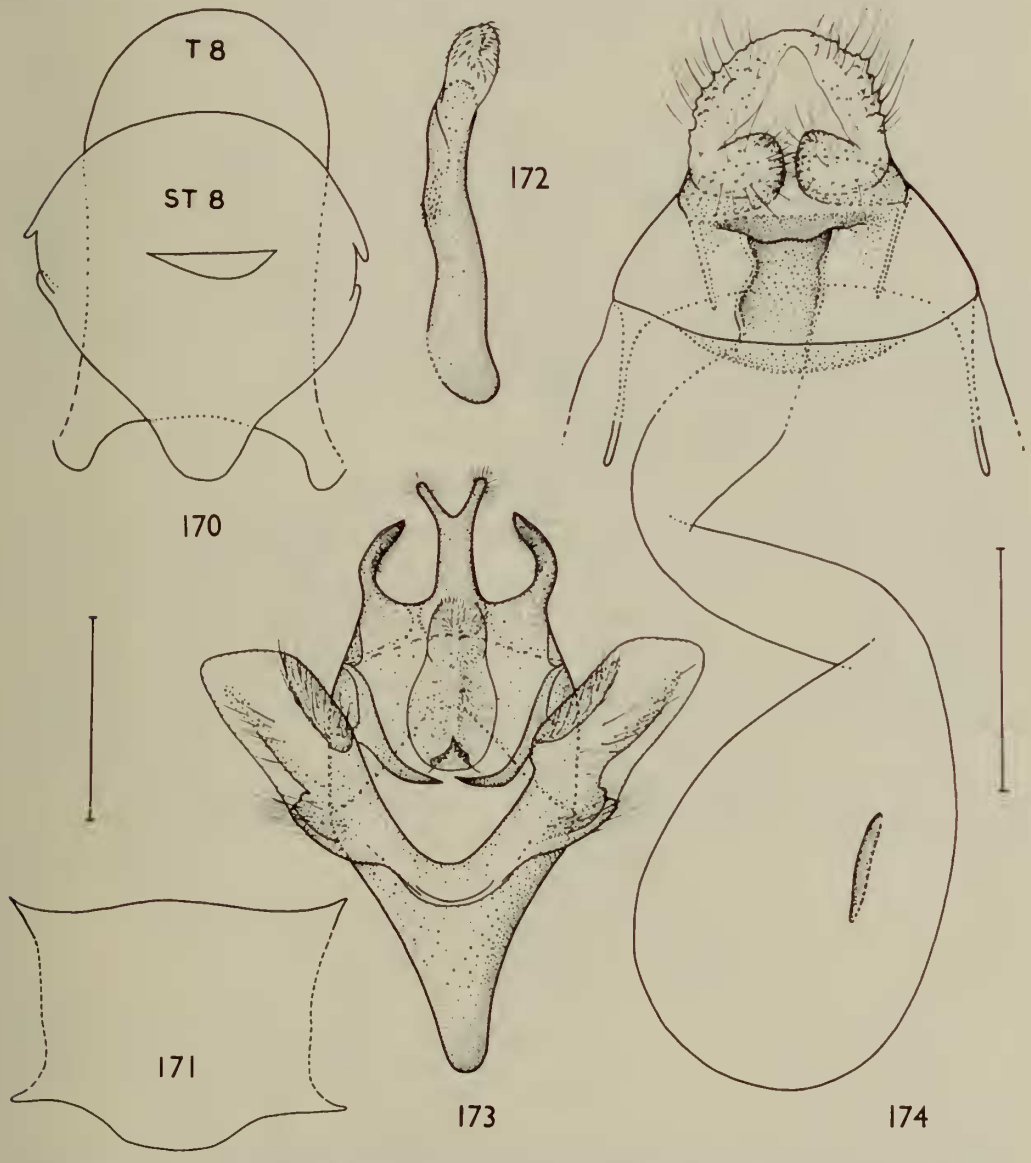
Differs from the nominate subspecies in the following respects : fore wing much more strongly falcate and outer margin sharply angled outwards at Cu_{1a} ; hind wing angled at Cu_{1a} ; male genitalia distinctive (see Text-figs. 180–182) ; ostium and eighth segment of female genitalia differently shaped (Text-fig. 179).

Wing. ♂ 16·5–20·5 mm. (14) ; ♀ 18·0–22·5 mm. (8).

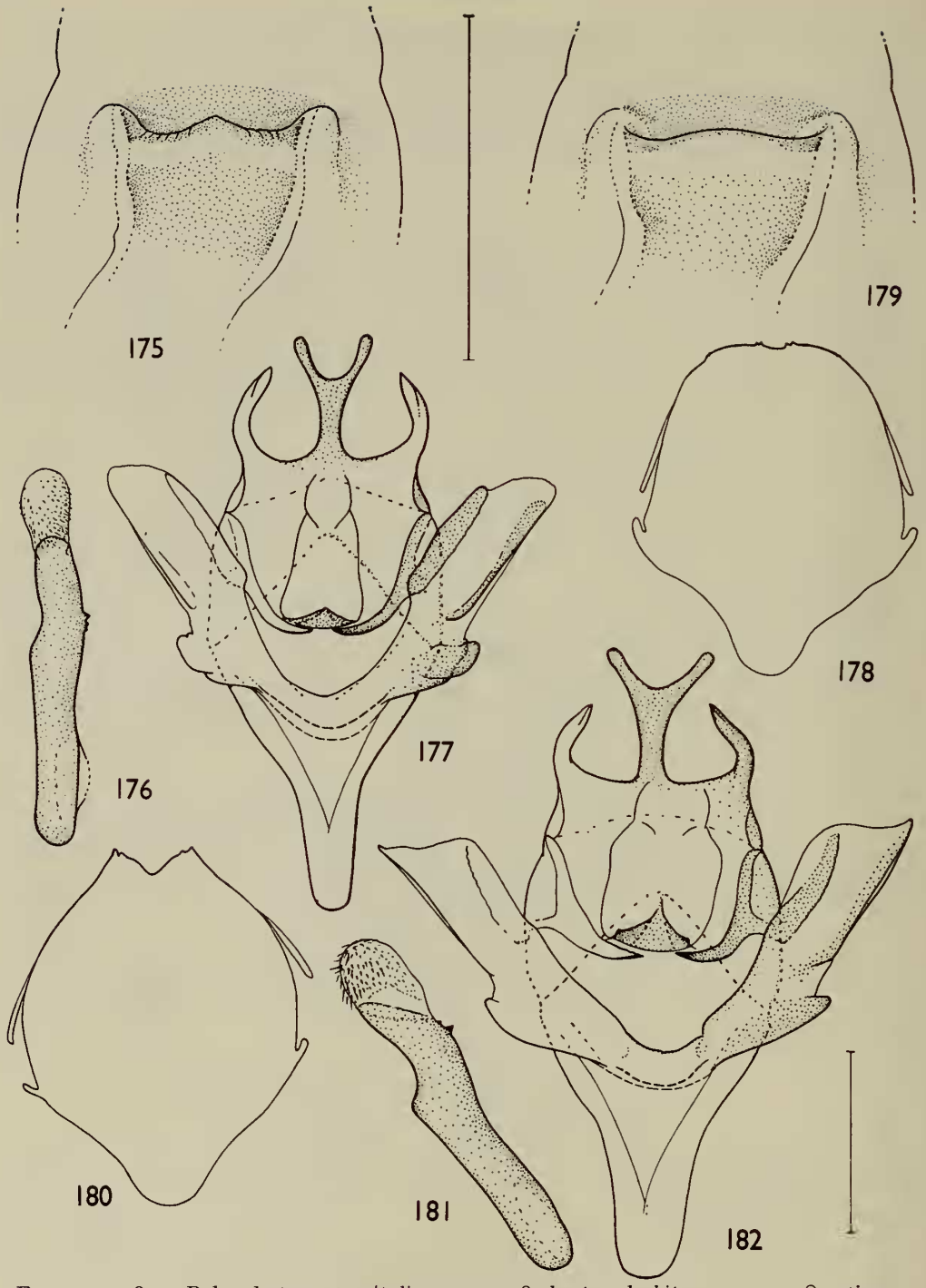
Distribution. China (Chekiang, Fukien, and possibly Shansi).

Holotype ♂. China : Chekiang, West Tien-Mu-Shan, 1600 m., 26.v.1932 (*Höne*) ; Drepanidae genitalia slide No. 699. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 4 ♂ and 4 ♀, Chekiang, West Tien-Mu-Shan, 1600 m., 26.v.–25.ix.1932 (*Höne*) ; 8 ♂ and 1 ♀, East Tien-Mu-Shan, 17.v.–14.vi.1931 (*Höne*) ; 3 ♂ and 1 ♀, Fukien, Kuatun, 2300 m., 19.iv.–27.v.1938 (*Höne*).



Figs. 170–174. *Palaeodrepana harpagula harpagula*, genitalia. 170, ♂ eighth tergite and sternite ; 171, ♂ seventh sternite ; 172, aedeagus ; 173, ♂ ; 174, ♀.



FIGS. 175–182. *Palaeodrepana*, genitalia. 175–178, *harpagula bitorosa*. 175, ♀ ostium ; 176, aedeagus ; 177, ♂ ; 178, ♂ eighth sternite. 179–182, *harpagula emarginata*. 179, ♀ ostium ; 180, ♂ eighth sternite ; 181, aedeagus ; 182, ♂.

A female, in the Museum Koenig, from Shansi province, N. China, may also prove to belong to this subspecies.

Palaeodrepana harpagula bitorosa ssp. n.

(Pl. 4, fig. 330 ; Text-figs. 175–178)

Similar externally to *emarginata*, but with fore wing not so strongly produced in most specimens. The male genitalia (Text-figs. 176–178) and the shape of the anterior lip of the ostium in the female genitalia (Text-fig. 175) are diagnostic.

Wing. ♂ 18·0–21·5 mm. (40) ; ♀ 18·0–21·5 mm. (10).

Distribution. China (S. Shensi, and possibly Szechwan).

Holotype ♂. China : S. Shensi, Tapaishan im Tsinling, *c.* 1700 m., 22.vi.1935 (*Höne*) ; Drepanidae genitalia slide No. 697. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 71 ♂ and 16 ♀, S. Shensi, Tapaishan im Tsinling, *c.* 1700 m., 21.vi.–3.vii.1936 (*Höne*).

A male from Mt. Omei (Szechwan) in the U.S. National Museum, together with a female from Ta-tsien-lou (Szechwan) and another from Kwanhsien (Szechwan), in the BM(NH), belong either to this subspecies or to a new subspecies, but further material is needed from Szechwan before either of these alternatives can be confirmed.

STREPSIGONIA Warren

Strepsigonia Warren, 1897 : 17. Type-species *Strepsigonia nigrimaculata* Warren, 1897 : 17, by original designation.
Strepsigonia Warren ; Gaede, 1931 : 9.
Monurodes Warren, 1923 : 475. Type-species *Monurodes trigonoptera* Warren, 1923 : 475, by monotypy. **syn. n.**

Distribution. India, Sikkim, Burma, China, Malaysia, Indonesia and the Philippines. Six species are at present recognized. Only one species, *diluta*, is known to occur in China.

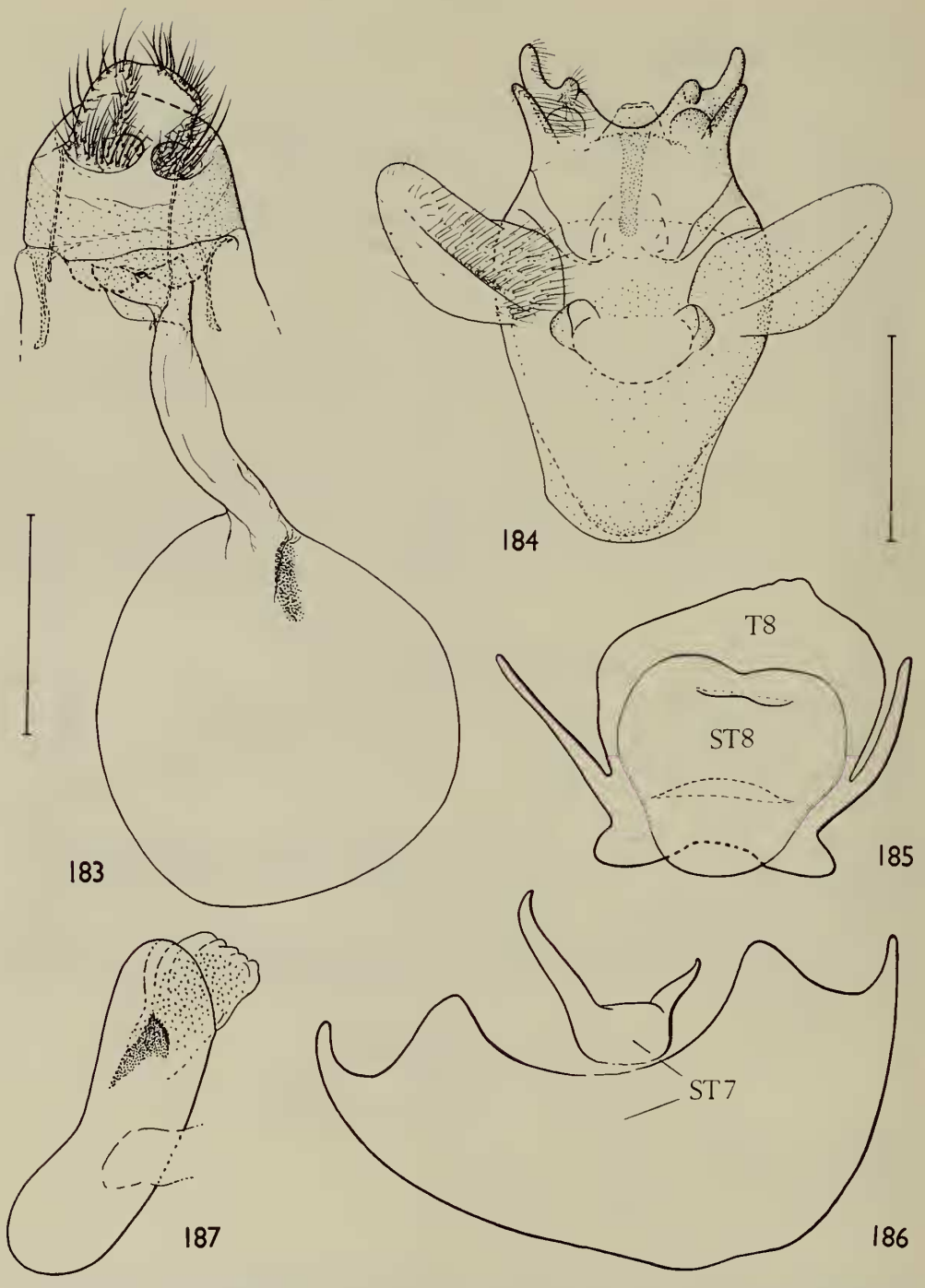
A study of the non-Chinese species of *Strepsigonia* may reveal more precisely where its affinities lie, but its present placement near *Palaeodrepana* and *Canucha* seems reasonable.

Strepsigonia diluta (Warren)

(Pl. 11, fig. 359 ; Text-figs. 183–187)

Tridrepana diluta Warren, 1897 : 18.
Tridrepana diluta Warren ; Warren, 1922 : 467. [Fig.]
Tridrepana diluta Warren ; Gaede, 1931 : 28.
Strepsigonia diluta (Warren) Watson, 1957 : 411.

Distribution. Known from N. India, Sikkim, and from a single Chinese specimen (Kwangtung, Canton) in the Höne collection, Bonn, which probably represents a new subspecies of *diluta*.



FIGS. 183–187. *Strepsigonia diluta*, genitalia. 183, ♀ ; 184, ♂ ; 185, ♂ eighth tergite and sternite ; 186, ♂ seventh sternites ; 187, aedeagus.

CANUCHA Walker

(Pl. 11, figs. 366–368 ; Text-figs. 188–199)

Canucha Walker, 1866 : 1574. Type-species *Canucha curvaria* Walker, 1866 : 1574, by monotypy.
Canucha Walker ; Gaede, 1931 : 40.
Campylopteryx Warren, 1902 : 340. Type-species *Campylopteryx sublignata* Warren, 1902 : 340, by monotypy. **syn. n.**
Campylopteryx Warren ; Gaede, 1931 : 40.

This is a genus of six described species : *curvaria* Walker, 1866 : 1574, (Mysol Is. New Guinea and the Solomons) ; *sublignata* Warren, 1902 : 340 (Buru, Amboina, Watubela, New Guinea, Solomons); *specularis* Moore, 1879 : 407 (Ceylon, India, China, Malaysia, Indonesia) ; *miranda* Warren, 1923 : 475 (N.E. India, Formosa); *bouvieri* Oberthür, 1916 : 272 (China) and *duplexa* Moore, 1865 : 816 (N.E. India, Sikkim, Burma). The distribution is summarized in Table 1.

The affinities of *Canucha* are uncertain, but it is probably not taxonomically distant from *Drepana* Schrank.

A short account is given below of the species that occur in Formosa or China (*specularis*, *bouvieri* and *miranda*) and of *duplexa* which is very closely allied to *bouvieri*.

The name ' *depressa* Warren ' was first published in 1916 accompanying a figure in *Die Gross-Schmetterlinge der Erde* **10** : pl. 49, but was not then binominal. The name was used again, this time in a binominal sense with *Canucha*, Seitz, 1934, *Die Gross-Schmetterlinge der Erde* **10** : 859, Druckfehler und Berichtigung, but the name was not accompanied by a diagnosis, thus contravening Article 13 of the International Code of Zoological Nomenclature, and therefore remains unavailable. A female ' syntype ' of ' *depressa* ' from Rendova (Solomons), in the BM(NH), is probably conspecific with the male holotype of *curvaria*.

Canucha specularis (Moore)

(Pl. 11, fig. 367 ; Text-figs. 196–199)

Drepana specularis Moore, 1879 : 407.
Drepana specularis Moore ; Moore, 1882 : 120. [Fig.]
Canucha specularis (Moore) Warren, 1923 : 475. [Fig.]
Canucha specularis (Moore) ; Gaede, 1931 : 40.
Platypteryx obtruncata Warren, 1900 : 117. [Synonymized by Gaede, 1931.]

The genitalia and the presence of well-developed subterminal spots on the fore wing and of two closely apposed hyaline patches in the hind wing distinguish this species from the closely related *curvaria* Walker.

Distribution. Ceylon, India, China, Java, Sumatra, Borneo and Celebes. A single male from Lofanshan (S. China) in the Museum Koenig, Bonn, is the only known Chinese specimen : it may prove to represent a new subspecies of *specularis*.

Types. *specularis*. The female type material (' Ceylon (Sir W. Gregory) ') may be lost. No statement was given by Moore (1879) concerning the location of the

type material which may have been deposited in his own collection, now the property of the BM(NH). The only specimen from the type locality in the BM(NH), a female presented by W. Lindsay, is slightly too small to fit the measurements given in the original description though it otherwise matches the description and the figure subsequently published by Moore (1882).

obtruncata. Holotype ♀. This bears a printed label ' Bahia ', obviously due to an error in labelling. Hampson has affixed a label ' *Drepana specularis* Moore, fr. Ceylon G.F.H.' The holotype certainly must have been captured in the Oriental Region.

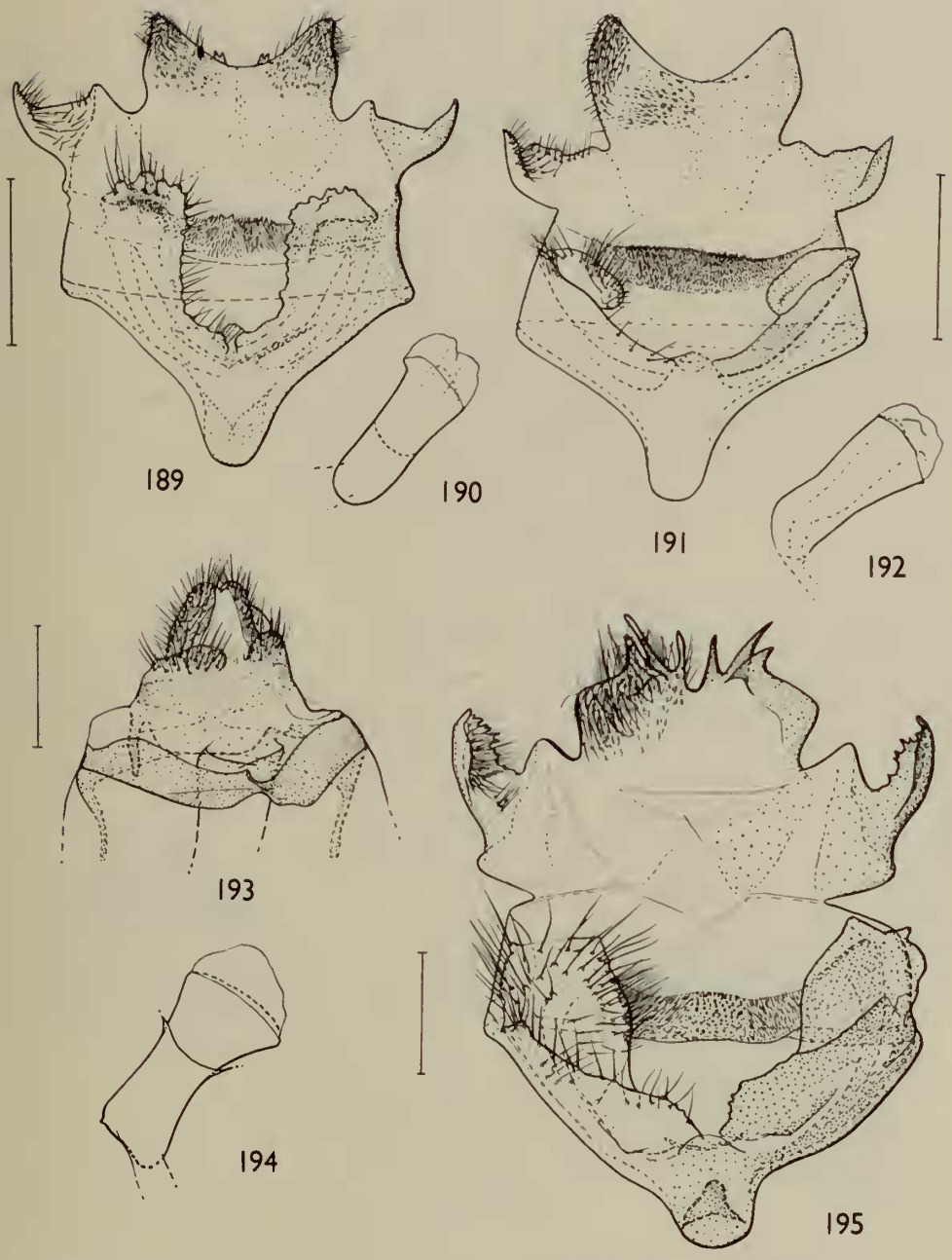
Canucha duplexa (Moore)

(Pl. 11, fig. 368 ; Text-figs. 188–192)

Drepana duplexa Moore, [1866] : 816. [Good fig.]
Canucha duplexa (Moore) Warren, 1923 : 475.

Type. The type material (' Darjeeling ') was deposited in the A. E. Russell collection, but no trace can be found of this collection, which is lost according to Horn and Kahle (1937 : 380). I select as NEOTYPE a ♂ specimen in the BM(NH)

Fig. 188. *Canucha duplexa duplexa*, ♀ genitalia.



FIGS. 189–195. *Canucha*, genitalia. 189, 190 *duplexa duplexa*. 189, ♂ ; 190, aedeagus. 191, 192, *duplexa birmana*. 191, ♂ ; 192, aedeagus. 193, *bouvieri*, ♀. 194, 195, *miranda*. 194, aedeagus ; 195, ♂.

labelled : Darjeeling (*Pilcher*) ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 1029.

The colour-pattern and the male genitalia separate *duplexa* from *miranda* Warren. *C. bouvieri* Oberthür (q.v.) may later prove to be synonymous with *duplexa birmana* when males of the former are available for study.

Two subspecies are at present recognized : the nominate subspecies (India) and *birmana* (Burma).

Canucha duplexa duplexa (Moore)

(Pl. 11, fig. 368 ; Text-figs. 188–190)

Canucha duplexa (Moore) ; Warren, 1923 : 475. [Good fig.]
Canucha duplexa (Moore) ; Gaede, 1931 : 40.

Distinguished from *duplexa birmana* by the non-angulate postmedial fascia on the hind wing and by the male genitalia.

Known only from N.E. India.

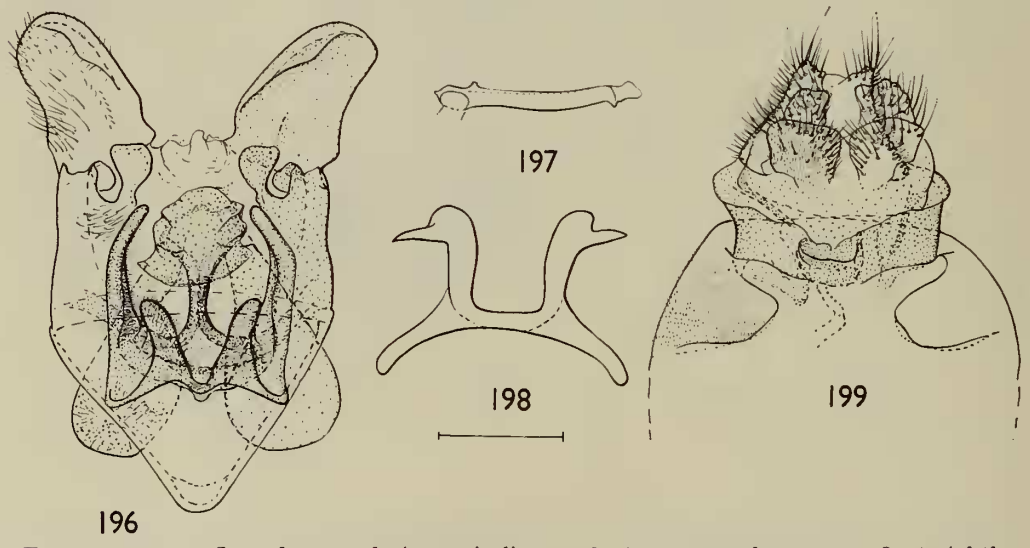
Canucha duplexa birmana Bryk

(Text-figs. 191, 192)

Canucha miranda birmana Bryk, 1943 : 27. [Good fig.]

Separable from the nominate subspecies by the male genitalia (Text-figs. 191, 192) and by the angulate postmedial fascia on the hind wing.

The name *birmana* may prove to be a junior synonym of *bouvieri* when male material of the latter is made available for comparison.



Figs. 196–199. *Canucha specularis*, genitalia. 196, ♂ ; 197, aedeagus ; 198, ♂ eighth sternite ; 199, ♀ (unornamented corpus bursae not shown).

Known only from N.E. Burma.

Type. Holotype ♂, N.E. Burma, Kambaiti, 700 ft., 10.v.1934 (*Malaise*). In the Naturhistoriska Riksmuseet, Stockholm.

Canucha bouvieri Oberthür

(Pl. 11, fig. 366 ; Text-fig. 193)

Canucha bouvieri Oberthür, 1916 : 272.
Canucha bouvieri Oberthür ; Oberthür, 1917 ; pl. 428. [Good fig.]
Canucha bouvieri Oberthür ; Gaede, 1932 : 168.
Drepana bouvieri (Oberthür) Gaede, 1931 : 26.

This nominal species may prove to be a subspecies of *duplexa* (Moore) and its name a senior synonym of *duplexa birmana* Bryk, but male specimens from Szechwan are needed before a satisfactory comparison of material can be made.

Distribution. Known only from two female specimens from the type locality (China, Szechwan) in the collection of the BM(NH).

Type. Holotype ♀ (not ♂ as stated by Oberthür), Ta-tsien-lou, 1910 ; Drepanidae genitalia slide No. 1028. In the BM(NH).

Canucha miranda Warren

(Text-figs. 194, 195)

Canucha miranda Warren, 1923 : 475. [Good coloured fig.]
Canucha miranda Warren, Gaede, 1931 : 40.
Canucha miranda f. *formosicola* Matsumura, 1931 : 741.

Separable from *duplexa* by the male genitalia and the colour pattern.

Distribution. Assam, N.E. India and Formosa. Through the kindness of Dr. H. Inoue I have seen a photograph of the single type specimen of *formosicola*. It is doubtless conspecific with the lectotype of *miranda* although it may prove to represent a distinct subspecies.

Type. *miranda*. LECTOTYPE ♂, here selected, labelled : Khasis, Oct. 1896, Nat. Coll. ; *Canucha miranda* Type ♂ Warr. ; Drepanidae genitalia slide No. 1027 ; Rothschild Bequest B.M. 1939–1. In the BM(NH).

DREPANA Schrank

(Pl. 11, figs. 358, 360–365 ; Text-figs. 200–219)

Drepana Schrank, 1802 : 155. Type-species *Phalaena falcataria* L., 1758 : 519, by subsequent designation by Westwood, 1840 : 104. [See 1961, *Bull. zool. Nom.* **18** : 267.]
Drepana Schrank ; Gaede, 1931 : 17.
Drepana Schrank ; Inoue, 1962 : 20.
Drepania Hübner, [1819 : 140]. An unjustified emendation of *Drepana* Schrank. [See 1961, *Bull. zool. Nom.* **18** : 267.]
Platypteryx Laspeyres, 1803 : 29. Type-species *Phalaena falcataria* L., 1758 : 519, by subsequent designation by Latreille, 1810 : 441.

'*Platypterix*' ; Ochsenheimer, 1816 : 97. An incorrect subsequent spelling of *Platypteryx* Laspeyres.

Falcaria Haworth, 1809 : 152. Type-species *Phalaena lacertinaria* L., 1758 : 519, by subsequent designation by Kirby, 1892 : 733.

Prionia Hübner, [1819] : 150. Type-species *Phalaena lacertula* Denis and Schiffermüller, [1776] : 64, by monotypy. **syn. n.**

Inoue (1962 : 21, 22) recently transferred to a new genus, *Palaeodrepana* (p. 92), three species previously classified under *Drepana*, and it is clear that further reclassification of *Drepana*, *sensu* Gaede (1931), is necessary. I consider, however, that the four Chinese species dealt with in the following account are congeneric with the type-species of *Drepana*. Several species included in *Drepana* by Gaede (1931) have been transferred in this paper to other genera (see index).

There are overall similarities between *Drepana* and *Tridrepana* Swinhoe (p. 111) which suggest possible close phyletic affinities.

Drepana curvatula (Borkhausen)

(Pl. 11, figs. 358, 363)

Phalaena curvatula Borkhausen, 1790 : 460.

Drepana curvatula (Borkhausen) Gaede, 1931 : 20.

Drepana curvatula (Borkhausen) ; Inoue, 1962 : 21. [Good figs. of moth and genitalia.]

This species is closely allied to *Drepana falcataria* L. (1758 : 519) and is known to be capable of forming hybrids with the latter (see Strand, 1911 : 199). It can be distinguished from *falcataria* by the colour-pattern and by minor differences in the male genitalia.

Drepana curvatula curvatula (Borkhausen)

(Pl. 11, fig. 358)

Drepana curvatula (Borkhausen) ; Gaede, 1931 : 20.

Drepana curvatula (Borkhausen) ; Strand, 1911 : pl. 23h.

Bombyx sicula Esper ; *sensu* Hübner, [1803] : pl. 11, figs. 42, 43 ; [1809] : pl. 11, fig. 4 ; [1838] : pl. 83, fig. 351 ; [1819] : 150 ('*sicula* Schiffermüller').

The nominate subspecies has been recorded from most European countries. It can be distinguished from *acuta* by the colour-pattern of the wings.

Type. Holotype ♀, Germany, Frankfurt. [Figured by Ernst and Engramelle (1786 : pl. 208, figs. 27b, f, g).] In Wiesbaden.

Drepana curvatula acuta Butler

(Pl. 11, fig. 363)

Drepana acuta Butler, 1881 : 59.

Drepana curvatula acuta Butler ; Inoue, 1962 : 21. [Good figs. of moth and genitalia.]

Falcaria curvatula acuta (Butler) Inoue, 1959 : 175. [Good fig.]

Drepana curvatula japonibia Strand, 1911 : 200. [Synonymized with *acuta* by Inoue, 1962 : 21.]

Drepana curvatula urupula Bryk, 1942 : 27. [Synonymized with *acuta* by Inoue, 1962 : 21.]
Drepana curvatula koreula Bryk, 1949 : 27. [Synonymized with *acuta* by Inoue 1962 : 21.]

Distinguishable from the nominate subspecies only by the colour-pattern (see references to figs. above).

Distribution. Japan (see Inoue 1959, 1962), S.E. Russia and Kuril Islands, Korea, China (Manchuria). There is a single male in the Höne collection, Bonn, from Shansi which also probably represents this subspecies.

Types examined. *acuta*. I select as LECTOTYPE a male from the original series in the BM(NH) labelled : Tokei [Tokyo], 89.97 ; *Drepana acuta* ♂ Butler Type [in Butler's handwriting] ; Drepanidae genitalia slide No. 325.

japonibia. Syntype, Nikko [Japan]. In the Zoologisches Museum, Berlin.

urupula. Holotype ♀, [Kuril Is.], Urup, Kopune. In the Naturhistoriska Riksmuseet, Stockholm.

koreula. Holotype ♀, Korea. In the Naturhistoriska Riksmuseet, Stockholm.

Drepana rufofasciata Hampson

(Pl. 11, fig. 365 ; Text-figs. 200–202)

Drepana rufofasciata Hampson, [1893] : 334.
Drepana rufofasciata Hampson ; Warren, 1922 : 463. [Good figs.]
Drepana rufofasciata Hampson ; Gaede, 1931 : 27.

This species is externally closest to *pallida* Moore. It can be distinguished from the latter by the more reddish medial shade on the fore wing and by the less well marked postmedial fascia, which is parallel to the subterminal fascia on the fore wing (unlike *pallida*). Small differences in the male and female genitalia separate *rufofasciata* from *pallida* and *dispilata* Warren both of which are closely allied to *rufofasciata*.

Distribution. The range of *rufofasciata* includes Sikkim, and China. The few Chinese specimens listed below are considerably paler than the Sikkim material but no significant differences in the genitalia or other characters appear to be present.

Material examined. Type. LECTOTYPE ♂, here selected, labelled : Sikkim, Interior, *Möller*, *Drepana rufofasciata* Hmpsn. type ♂ ; Collectio H. J. Elwes ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 687. In the BM(NH).

Other material. *BM(NH)*. Sikkim : 2 ♂, 1 ♀ (*Möller*) ; 1 ♂, Tonglo, 10,000 ft., vii.1886 (*Elwes*). China, Tibet : 2 ♂, 2 ♀, Yatung (*Hobson*) ; 1 ♀, Chumbi valley, Dopenri.

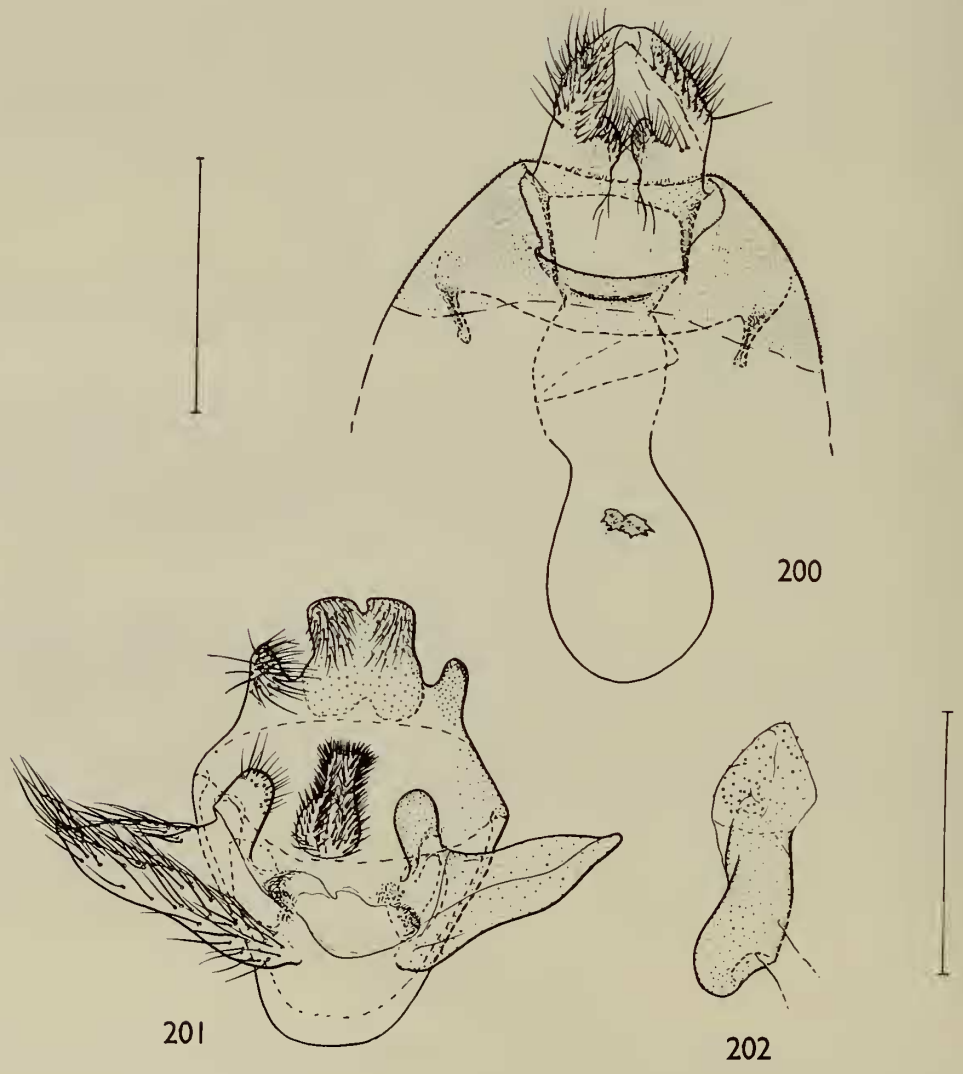
Drepana pallida Moore

(Pl. 11, figs. 360–361 ; Text-figs. 203–214)

Drepana pallida Moore, 1879 : 84.
Drepana pallida Moore ; Warren, 1922 : 463.
Drepana pallida Moore ; Gaede, 1931 : 27.

Readily distinguished from the closely related *dispilata*, and *rufofasciata* by the colour-pattern and the genitalia.

Four subspecies are known : the nominate subspecies (India, Burma), *cretacea* (China, Vietnam), *flexuosa* (China) and *nigromaculata* Okano (Formosa). An account of each of these is given to facilitate comparison between the Chinese and non-Chinese subspecies.



FIGS. 200–202. *Drepana rufofasciata*, genitalia. 200, ♀ ; 201, ♂ ; 202, aedeagus.

Drepana pallida pallida Moore

(Text-figs. 203–207)

Drepana pallida Moore ; Warren ; 1922 : pl. 481. [Good figs. ♂, ♀.]

Distinguished from the other three supspecies by the colour-pattern and by the male and female genitalia (see plate in Warren (1922) and Text-figs. 203–207).

Distribution. N.E. India and N. Burma.

Type. I select as LECTOTYPE a ♂ syntype in the collection of the BM(NH) labelled : Moore Coll. 94–106 ; Darjiling ♂ ; *Drepana pallida* Moore (Type) ♂ [in Moore's handwriting].

Drepana pallida cretacea Hampson **stat. n.**

(Pl. 11, fig. 360 ; Text-figs. 208, 209)

Drepana cretacea Hampson, 1914 : 107.
Drepana cretacea Hampson ; Gaede, 1932 : 168.

Externally, *cretacea* differs from the nominate subspecies in the following respects: fore wing less strongly falcate ; dark spot at posterodistal angle of cell generally larger ; postmedial fascia nearly straight, not arcuate ; proximal line of postmedial fascia touching or nearly touching distal end of cell in hind wing.

The male genitalia are similar to those of the nominate subspecies but have a differently shaped eighth abdominal sternite (Text-fig. 208). The female genitalia are characterized by the differently shaped ninth abdominal tergum. (Text-fig. 209).

Distribution. China (Szechwan), Vietnam.

Material examined. Type. Holotype ♀, [China, Szechwan], Huang-Mu-Chang, 7000 ft., vii.1889 (*Pratt*). In the BM(NH).

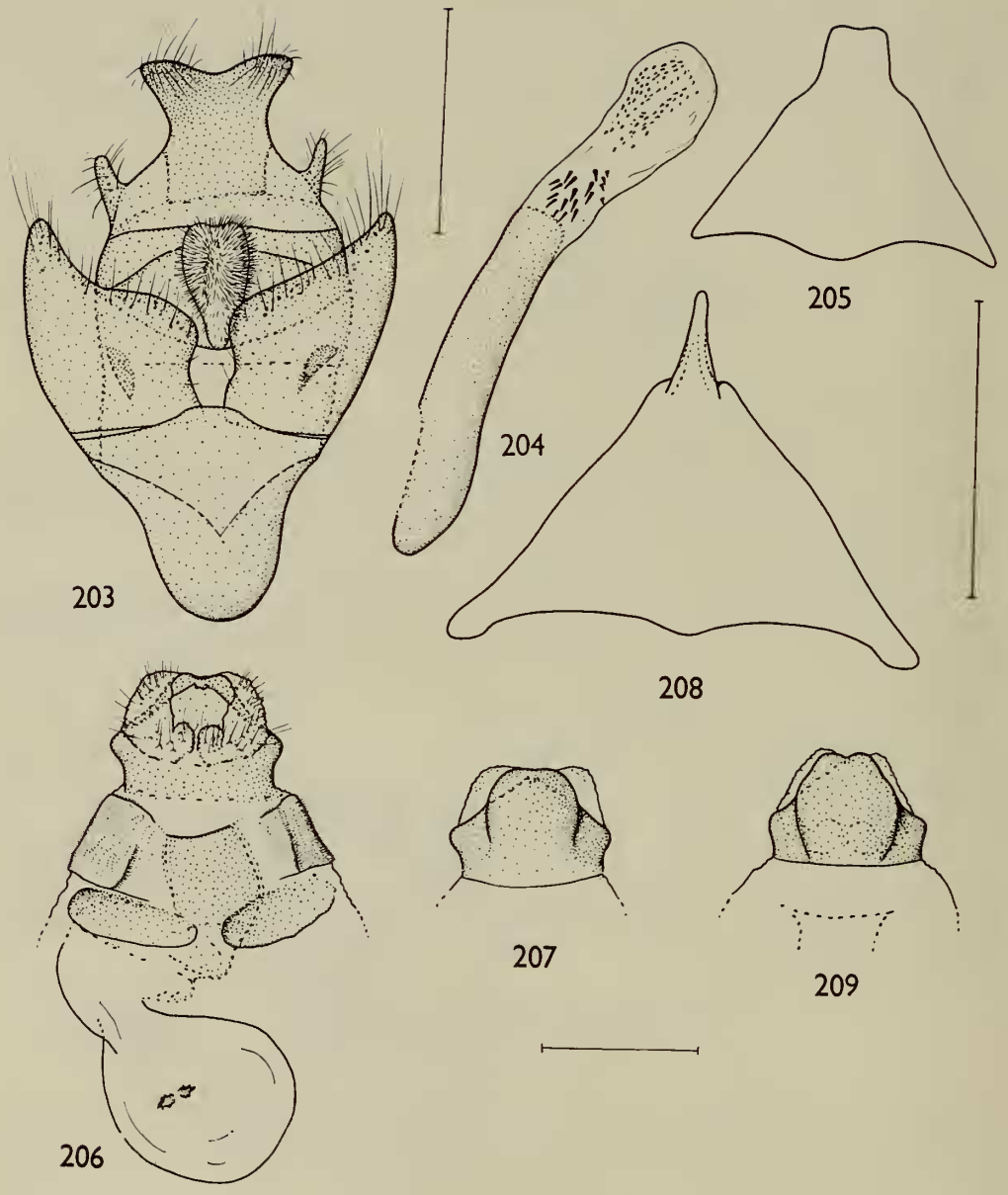
Other material. *BM(NH)*. China, Szechwan : 2 ♀, Ta-tsien-lou, 1897, 1906 ; 3 ♂ Shin-kai-Si, Mt. Omei, 1.viii.1921 (*Franck*) ; 2 ♀, Tien-tsuen, 1897 (*Déjean*) ; 2 ♀, Tien-tsuen, Yuin-kin, 1899 ; 2 ♀, Kwanhsien 12.vii.1925, vii.1930 ; 3 ♂, 4 ♀, Siao-lou, 1899–1903 ; 1 ♂, Moupin, 1898 ; 1 ♀, Pa-tse-fang, 1893. *U.S. National Museum*. China, Szechwan : 3 ♂, Mt. Omei.

Drepana pallida flexuosa **ssp. n.**

(Pl. 11, fig. 361 ; Text-figs. 210–212)

This is readily distinguished from the other subspecies of *pallida* by the more strongly arcuate fore wing, and by the more strongly marked cell-spots and more strongly arcuate postmedial fascia on the fore wing. It differs from the nominate subspecies by the fact that the proximal line of the postmedial fascia on the hind wing touches or nearly touches the distal end of the cell. In the male genitalia *flexuosa* differs from the nominate subspecies in the shape of the valves, gnathus and eighth abdominal sternite (Text-figs. 210, 211). The female genitalia are similar to those of the nominate subspecies but possess a distinctive ninth tergum (Text-fig. 212).

Wing. ♂ 23·0 mm. (1) ; ♀ 26·5–31·0 mm. (2).



FIGS. 203–209. *Drepana*, genitalia. 203–207, *pallida pallida*. 203, ♂ ; 204, aedeagus ; 205, ♂ eighth sternite ; 206, ♀ ; 207, ♀ ninth segment (dorsal view). 208, 209, *pallida cretacea*. 208, ♂ eighth sternite ; 209, ♀ ninth segment. (dorsal view).

Distribution. China (Fukien, Chekiang).

Holotype ♂. [China :] Fukien, Kuatun, 230 m., 3.iv.1938 (*Klapperich*). In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 1 ♀, type-locality, 2.vii.1938 (*Höne*) ; 1 ♀, Chekiang, West Tien-mu-shan, 12.iv.1932 (*Höne*).

Drepana pallida nigromaculata Okano

(Text-figs. 213, 214)

Drepana pallida nigromaculata Okano, 1959 : 38.

I have examined only two males of this Formosan subspecies. One of these specimens had been identified and compared with Okano material in Japan by Dr. H. Inoue. They resemble specimens of *cretacea* most closely in wing shape and colour-pattern, but the genitalia are most like those of *flexuosa*.

Type. [Not seen.] Holotype ♂, central Formosa, Puli-Nushe, v.1958. In the Okano collection.

Drepana dispilata Warren

(Pl. 11, figs. 362, 364 ; Text-figs. 215–219)

Drepana dispilata Warren, 1922 : 463. [Fig.]

Distinguished from *pallida*, to which *dispilata* is probably most closely allied, by the two large cell-spots on the fore wing and by the genitalia of both sexes (Text-figs. 215–219).

Three subspecies are known : the nominate subspecies (India, Sikkim, Burma), *rufata* (China), and *grisearipennis* (China).

Drepana dispilata dispilata Warren

(Text-figs. 215–217)

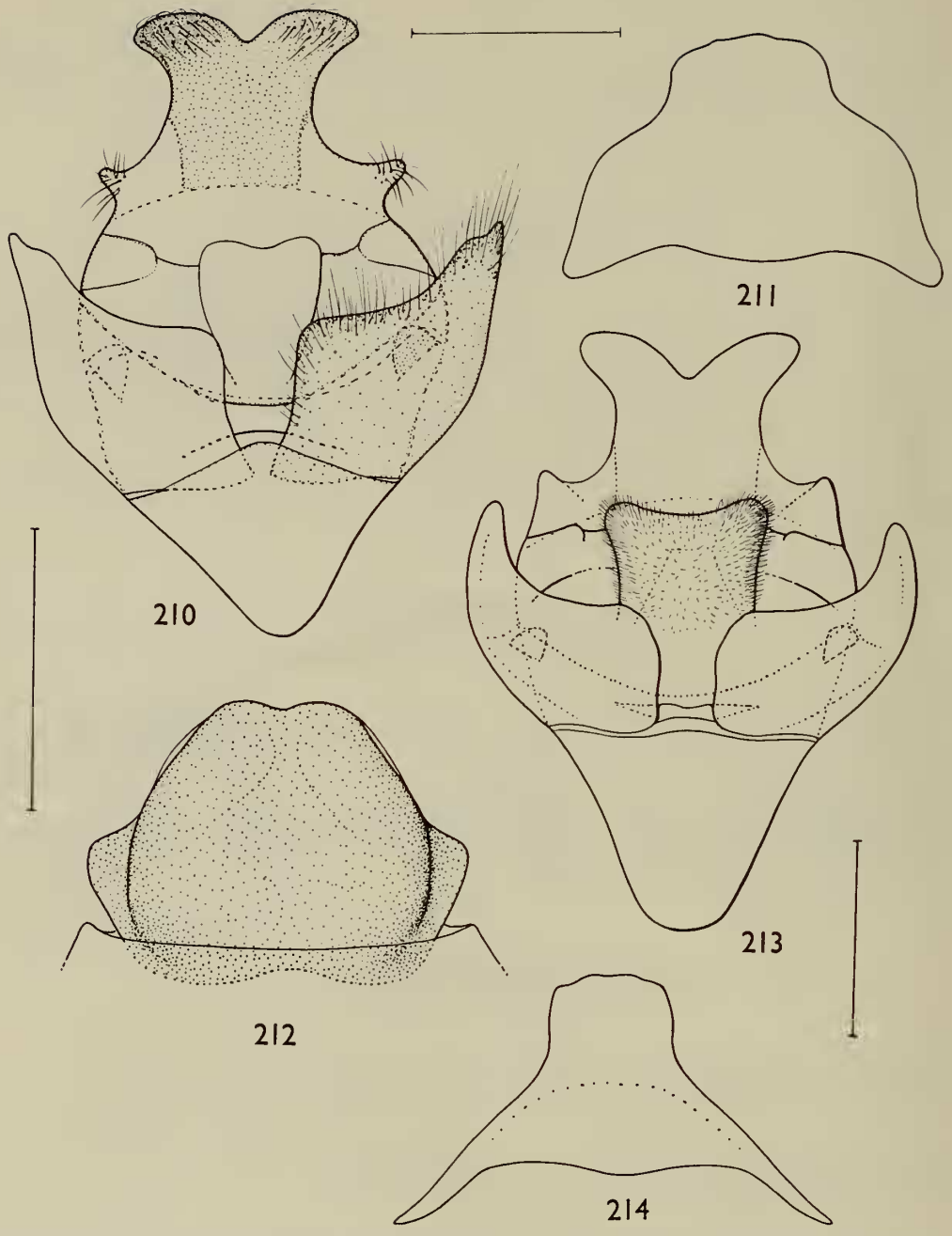
Drepana dispilata Warren ; Gaede, 1931 : 26.

Drepana x-z-nigrum Bryk, 1943 : 11. Holotype ♀, [N.E. Burma], Kambaiti, 7000 ft ; in the Naturhistoriska Riksmuseet, Stockholm. [Good figs.] **syn. n.**

The male genitalia (Text-figs. 215–217) and the less strongly falcate fore wing separate this subspecies from the two Chinese subspecies.

Known from N. India, Sikkim and N. Burma.

Type. LECTOTYPE ♀, here selected, labelled : Knyvett ; Collectio H. J. Elwes ; *Drepana dispilata* Warr. Type ♀ ; *Drepana dispilata* Warr. ♀ ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 684. In the BM(NH).



FIGS. 210–214. *Drepana*, genitalia. 210–212, *pallida flexuosa*. 210, ♂ ; 211, ♂ eighth sternite ; 212, ♀ ninth segement (dorsal view). 213, 214, *pallida nigromaculata*, ♂. 213, ♂ ; 214, eighth sternite.

Drepana dispilata rufata ssp. n.

(Pl. 11, fig. 362 ; Text-figs. 218, 219)

Distinguished from the nominate subspecies by the more strongly falcate fore wing (Pl. 11, fig. 362) and by the male genitalia (Text-fig. 218). The female genitalia are figured in Text-fig. 219.

Wing. ♂ 18·5–21·5 mm. (12) ; ♀ 20·0–21·5 mm. (4).

Distribution. China (Yunnan, Shensi).

Holotype ♂. [CHINA:] S. Shensi, Tapaishan im Tsinling, 26.vi.1935 (*Höne*) ; Drepanidae genitalia slide No. 689. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* CHINA : 9 ♂ and 3 ♀, S. Shensi, Tapaishan im Tsinling, 22.vi.–2.vii.1935 (*Höne*) ; 3 ♂ and 1 ♀, N. Yunnan, Likiang, 2000 m., 19–27.iv.1935 (*Höne*). *Daniel Collection, Munich.* CHINA : 1 ♂, S. Shensi, Tapaishan im Tsinling, 22.vi.1935 (*Höne*).

Drepana dispilata grisearipennis Strand stat. n.

(Pl. 11, fig. 364)

Drepana grisearia Leech, 1898 : 365. [A junior homonym.]
Drepana grisearipennis Strand, 1911 : 201 ; as a replacement name for *Drepana grisearia* Leech, preoccupied by *Drepana grisearia* Staudinger, 1892 : 335.
Drepana grisearipennis Strand ; Gaede, 1931 : 26.

The only available example of this species, the holotype, differs in only minor respects from the material of *rufata*, both externally and in the genitalia. Further material from Szechwan should show whether or not *rufata* and *grisearipennis* are synonymous.

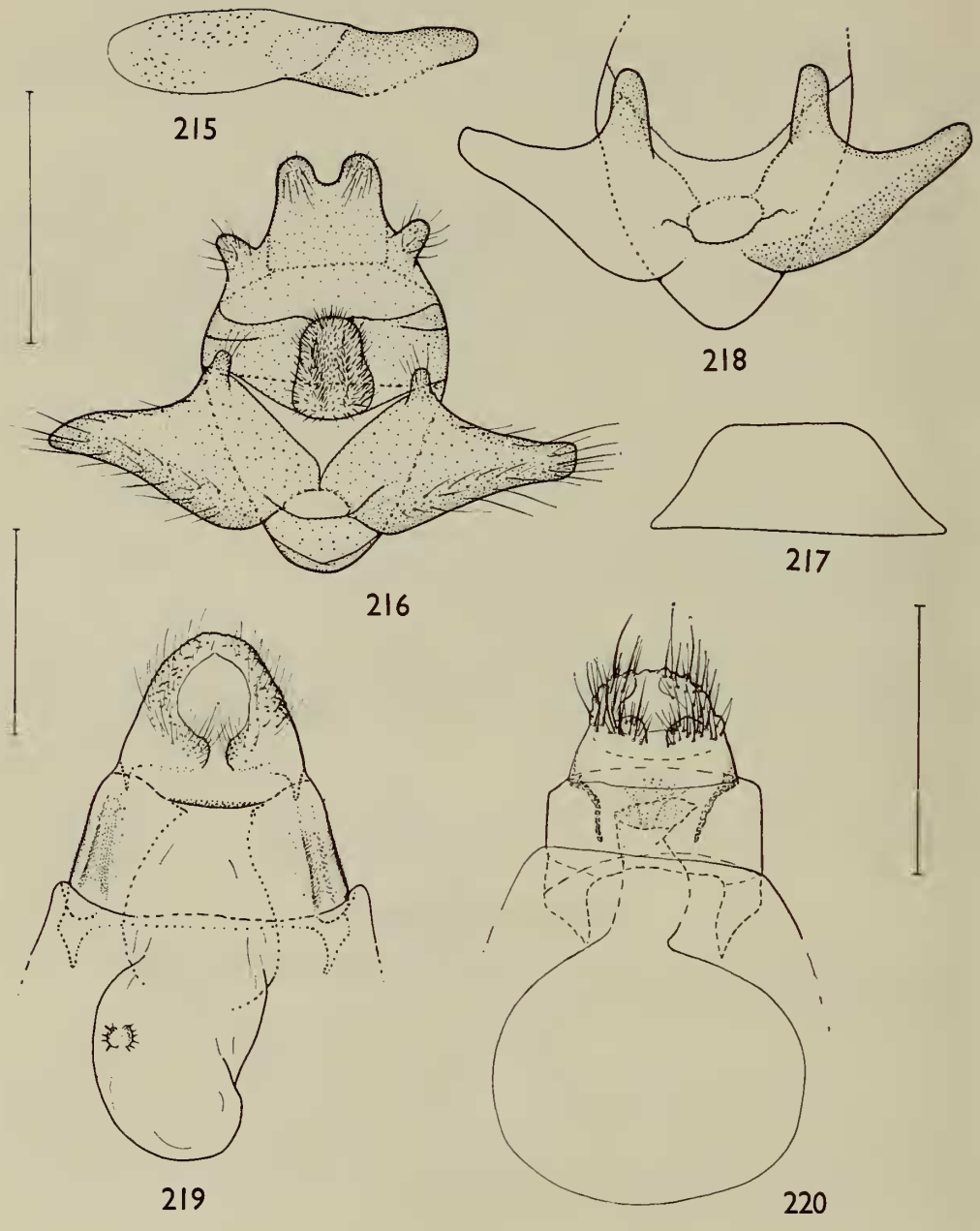
Distribution. China (Szechwan).

Material examined. Type. Holotype ♀, Pu-tsu-fong, 9820 ft., vi, vii.1890. In the BM(NH).

TRIDREPANA Swinhoe

Tridrepana Swinhoe, 1895 : 3. Type-species *Drepana albonotata* Moore, 1879 : 83, by subsequent designation by Warren, 1922 : 464.
Tridrepana Swinhoe ; Watson, 1957 : 411. [Revision.]
' *Iridrepana* ' ; Warren, 1922 : 464. [An incorrect subsequent spelling of *Tridrepana*.]

As stated in an earlier paper (Watson, 1957 : 436) there is some doubt concerning the whereabouts of the type material of *albonotata*, the type-species of *Tridrepana*. *T. albonotata* was described from material in the Atkinson collection, now in the Zoological Museum at Berlin, and I think it is best to select a female specimen from the Atkinson collection, labelled ' Parisnath ' (the type-locality), as the LECTOTYPE, even though it lacks Moore's usual handwritten label indicating its status as a type. The specimen labelled ' *Drepana albonotata* Moore, type ', in the BM(NH), collected in Darjeeling, was presumably labelled by Moore subsequent to the preparation of the original description of *albonotata*.



FIGS. 215–219. *Drepana*, genitalia. 215–217, *dispilata dispilata*, ♂. 215, aedeagus ; 216, ♂ ; 217, eighth sternite. 218, 219, *dispilata rufata*. 218, ♂ valves and saccus ; 219, ♀. FIG. 220. *Thymistadopsis undulifera*, ♀ genitalia.

Tridrepana is closely allied to *Drepana* Schrank. There is a reasonable degree of concordance externally and in the genitalia.

Distribution. Manchurian Subregion & Oriental Region (see Table 1). With the exception of *fulva*, no new material of any significance has been discovered since the last revision of *Tridrepana* (Watson, 1957) and reference should be made to this paper for descriptions and figures of the Chinese species. The following is a list of the species and subspecies known to occur in China.

Tridrepana fulvata (Snellen), 1876 : 19. N. India, Burma, Malaysia, Indonesia and China.

Tridrepana fulvata ssp. China (Hainan Is., Kwangtung), Hong Kong.

Tridrepana arikana (Matsumura), 1921 : 949. Bhutan, China, Formosa.

Tridrepana arikana arikana (Matsumura) Formosa, and probably mainland China.

Tridrepana crocea (Leech), 1888 : 649. Japan, China (Chekiang, Fukien, Hunan).

Tridrepana unispina Watson, 1957 : 458. Formosa and China (Fukien, Yunnan).

Tridrepana finita Watson, 1957 : 480. China (Tibet, Szechwan, Yunnan).

Tridrepana rubromarginata (Leech), 1898 : 365. Sikkim, Bhutan, Nepal, China.

Tridrepana rubromarginata rubromarginata (Leech). China (Szechwan, Yunnan).

Tridrepana thermopasta (Hampson), 1914 : 106. China ('W. China', probably Szechwan).

Tridrepana maculosa Watson, 1957 : 488. China (Szechwan, Yunnan).

Tridrepana marginata Watson, 1957 : 490. China (Szechwan, Yunnan).

Tridrepana fulva (Hampson), [1893] : 342. Sikkim, China (E. Tibet, Szechwan—1 ♀, Tu-pa-keo, in the BM(NH)). Contrary to inference in the type-citation in Watson (1957 : 489), Hampson did not designate a holotype. I therefore select as LECTOTYPE the ♂ syntype in the BM(NH), labelled : Sikkim, 1300 ft., Jongri, 1887 ; Drepanidae genitalia slide No. 446 ; B.M. negative No. 15463.

CALLIDREPANA Felder

(Pl. 12, figs. 369–372 ; Text-figs. 221–245)

Callidrepana Felder, 1861 : 30. Type-species *Callidrepana saucia* Felder, 1861 : 31, by monotypy.

Callidrepana Felder ; Gaede, 1931 : 34.

Callidrepana Felder ; Watson, 1965 : 149.

Damna Walker, [1863] : 1570. Type-species *Damna gelidata* Walker, [1863] : 1570 by monotypy. [Synonymized by Warren, 1922 : 471, by transference of type-species.]

Ausaris Walker, [1863] : 1632. Type-species *Ausaris scintillata* Walker [1863] : 1632, by monotypy. [Synonymized by Kirby, 1892 : 730.]

Ticilia Walker, 1865 : 394. Type-species *Ticilia argentilinea* Walker, 1865 : 394, by monotypy. [Synonymized by Warren, 1922 : 471, by transference of type-species.]

Drepanulides Motschulsky, 1866 : 192. Type-species *Drepanulides palleolus* Motschulsky, 1866 : 193, by subsequent designation by Inoue, 1962 : 32. [Synonymized by Kirby, 1892 : 730, by transference of type-species.]

Drepanula Gaede, 1914 : 65. Type-species *Drepanula argyrobapta* Gaede, 1914 : 65, by monotypy. [A junior homonym of *Drepanula* Frölich, 1828 : 11.]

Drepanulina Gaede, 1927 : 287. Type-species *Drepanula argyrobapta* Gaede, 1914 : 65, by monotypy. [A replacement name for *Drepanula* Gaede, 1914 : 65]. [Synonymized by Watson, 1965 : 149.]

This genus is distinguished from all other genera of Drepanidae, except *Macrocilix* Butler and *Tridrepana* Swinhoe, by the presence of widely distributed brilliantly lustrous scales on the upper surface of the wings. (In *Tridrepana*, one bright yellow species, *melliflua* Warren, has similar lustrous scales on the wings. *Macrocilix* is a distinctive genus in that the ground-colour of the wings of all the species is white).

Callidrepana includes over twenty species. It ranges from India to Japan, and through the Malay Archipelago and New Guinea to the Solomons. Three African species are known (see Watson, 1965 : 149). Four species occur in China : *hirayamai*, *patrana*, *ovata* and *gemina* (the latter two described here as new). (See Table 1.)

Key to the Chinese Species of *CALLIDREPANA*

Both Sexes

1 Postmedial fascia on upper surface of both wings simple ; ground-colour very pale yellowish white ; dark marking (where present) at distal end of cell on fore wing small, ovate (Pl. 12, figs. 370, 371). Genitalia as in Text-figs. 232–238 ***gemina*** (p. 119)

– Postmedial fascia on upper surface of both wing double ; ground-colour buff or buffish white ; marking (where present) at distal end of cell small and ovate, or large and rectangular (Pl. 12, fig. 372). Genitalia not as in *gemina* 2

2 Upper surface of fore wing with large, dotted, rectangular marking at distal end of cell. (Pl. 12, fig. 372). Genitalia as in Text-figs. 239–245 . ***hirayamai*** (p. 121)

– Upper surface of fore wing with small ovate marking at distal end of cell, or fore wing without cell-marking. Genitalia not as in *hirayamai* 3

3 Genitalia as in Text-figs. 221–227 . . . . . ***patrana*** (p. 114)

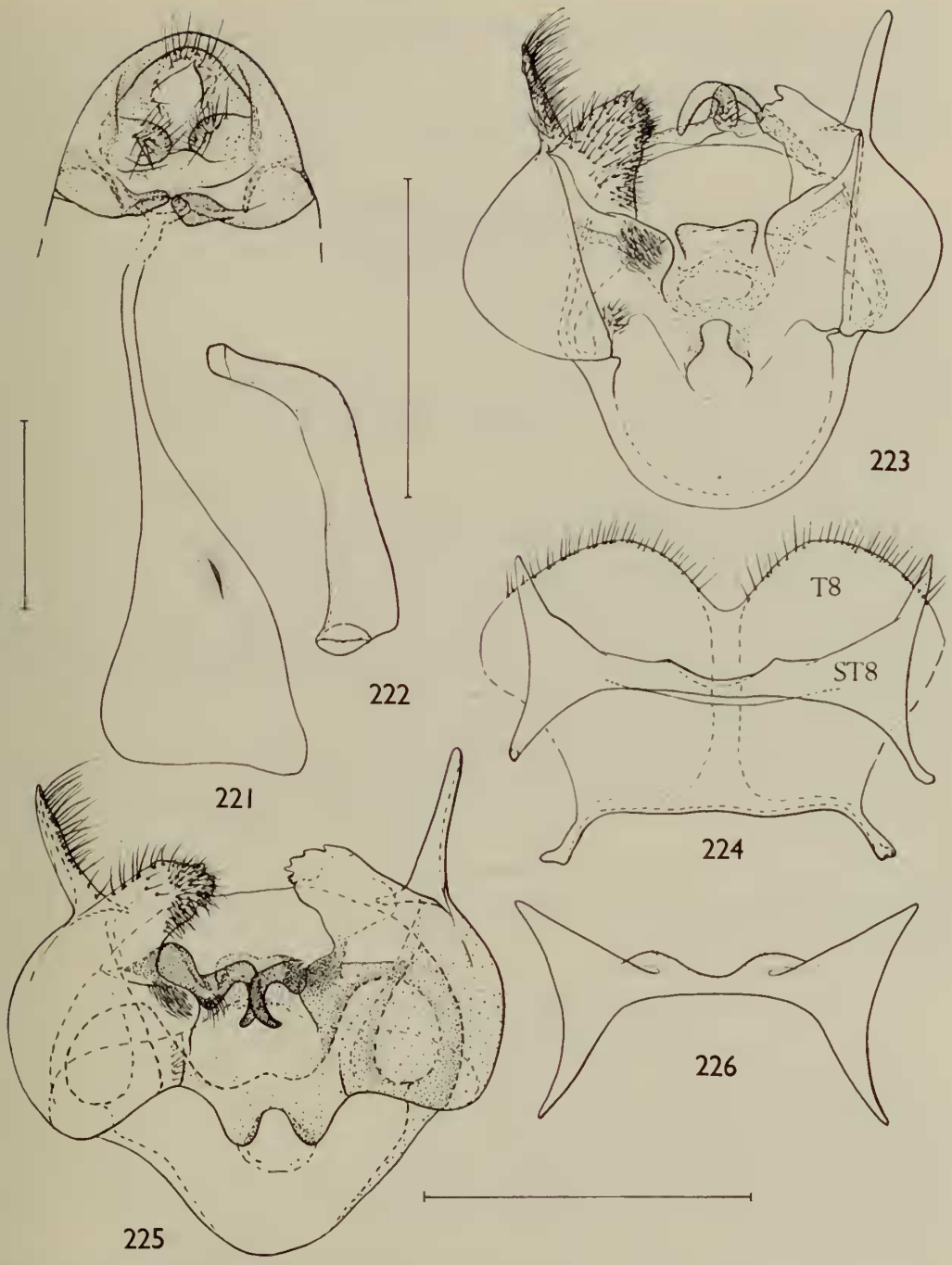
– Genitalia as in Text-figs. 228–231 . . . . . ***ovata*** (p. 117)

Callidrepana patrana (Moore)

(Text-figs. 221–227)

Drepana patrana Moore, [1866] : 816.

This species is separable from *ovata*, which is closely allied to *patrana* and forms a superspecies with it, by the less elongate cell-marking (where present) on the fore wing, the slightly more strongly falcate fore wing and by small but distinct differences in the genitalia of both sexes (see *ovata*). The male genitalia of *argenteola* Moore (1858 : 369) (India, Burma, Formosa, Malaysia and Indonesia) indicate that though this species is externally similar to *patrana*, except for the more strongly



FIGS. 221–226. *Callidrepana*, genitalia. 221–224, *patrana patrana*. 221, ♀; 222, aedeagus; 223, ♂; 224, ♂ eighth tergite and sternite. 225, 226, *patrana palleolus*, ♂. 225, ♂; 226, eighth sternite.

falcate fore wing and the narrower cell-marking on the fore wing, it is probably not closely allied to *patrana*.

Two subspecies are known : the nominate subspecies, known from India and China, and *palleolus* recorded only from Japan.

Callidrepana patrana patrana (Moore)

(Text-figs. 221–224)

Drepana argenteola var. *patrana* Moore ; Strand, 1911 : 202.
Callidrepana patrana (Moore) Warren, 1922 : 471.
Callidrepana patrana (Moore) ; Gaede, 1931 : 36.
Callidrepana patrana Inoue, 1962 : 32.
Callidrepana patrana formosana Inoue, 1955 : 13. [Elevation to subspecific rank of ab. *formosana* Matsumura, 1921 : 945] **syn. n.** [Synonymy anticipated by Inoue, 1962 : 32.]
Callidrepana patrana subbasalis Bryk, 1943 : 21. [Fig.] **syn. n.** [Synonymy anticipated by Inoue, 1962 : 32.]

The genitalia of both sexes provide the only reliable diagnostic features in separating this subspecies from the dark-spotted form of *palleolus*.

Material examined. Types. *patrana*. The syntypes (all males) were deposited in the collections of A. E. Russell and Moore. The Russell collection is almost certainly lost (see Horn and Kahle, 1937 : 380), and there are no syntypes in the Moore collection in the BM(NH). I have therefore selected a female specimen in the BM(NH) as the NEOTYPE, labelled : Darjiling (*F. Möller*) ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 993.

subbasalis. Holotype ♂, N.E. Burma, Kambaiti, 2000 m. ; Drepanidae genitalia slide No. 1683. In the Naturhistoriska Riksmuseet, Stockholm.

formosana. [Type not seen. Examples of *formosana* identified by Inoue have been studied.]

Other material. N.E. India, N. Burma, Formosa and China (Szechwan, Yunnan, Fukien, Chekiang). A single male from Laos, in the BM(NH), may prove to represent this subspecies.

Callidrepana patrana palleolus (Motschulsky)

(Text-figs. 225–227)

Drepanulides palleolus Motschulsky, 1866 : 193.
Drepana palleolus (Motschulsky) Strand, 1911 : 202.
Drepana palleolus (Motschulsky) ; Gaede, 1931 : 27.
Callidrepana palleolus (Motschulsky) Nagano, 1917 : 36.
Callidrepana patrana palleolus (Motschulsky) ; Inoue, 1955 : 13.
Callidrepana patrana palleolus (Motschulsky) ; Inoue, 1956 : 368.
Callidrepana patrana palleolus (Motschulsky) ; Inoue, 1959 : 175. [Good figs.]
Callidrepana patrana palleolus (Motschulsky) ; Inoue, 1962 : 32. [Good figs.]

Inoue (1955 : 13) gave the name *crassimaculata* to the form with an elongate dark spot at the distal end of the cell on the fore wing. This has been figured by Inoue

(1959, 1962) together with the paler unspotted f. *palleolus* Motschulsky (= ab. *simplificaria* Strand, 1911 : 202).

The unspotted form of this subspecies is easily distinguished from the nominate subspecies by the colour-pattern, but the male and female genitalia provide the only significant diagnostic characters in the dark-spotted form.

Distribution. Japan (see Inoue, 1956).

Type. According to investigations made for me by Dr. K. M. Efron and Dr. A. S. Danislevskyi in the U.S.S.R., all the Lepidoptera from the Motschulsky collection have been lost. There seems little doubt, however, from the original description that Nagano (1917) and Inoue (1959) have correctly identified this subspecies.

Callidrepana ovata sp. n.

(Pl. 12, fig. 369 ; Text-figs. 228–231)

♂. Front of head dark reddish brown ; vertex, palp and bipectinate antenna dull yellowish orange ; collar yellowish white.

Thorax buff or yellowish white. Colour-pattern of upper surface of wings as in Pl. 12, fig. 369 ; colours similar to the pale form of *C. patrana palleolus* but usually paler ; scattering of brilliantly lustrous scales present along veins proximal to postmedial fascia, along distal edge of postmedial fascia and in streak in basal half of costal area. In fore wing R_1 arises from near distal end of cell, R_2 from near distal end of areole ; *Rs* and M_1 from a point or on short stalk. $Sc + R_1$ approximates to *Rs* for short distance distal to end of cell in hind wing. Under surface of both wings pale yellowish buff, but fore wing more brownish basally ; fore wing usually with trace of reddish brown postmedial fascia anteriorly, corresponding in position to proximal part of this fascia on upper surface ; hind wing usually with trace of reddish brown postmedial fascia, corresponding in position to distal part of this fascia on upperside. Legs buff, but with outer surface of prothoracic tibia and tarsus brownish buff.

Abdomen similar in colour to adjacent surface of hind wing.

♂ genitalia as in Text-figs. 228, 230, 231.

♀. As for male but with shorter antennal pectinations.

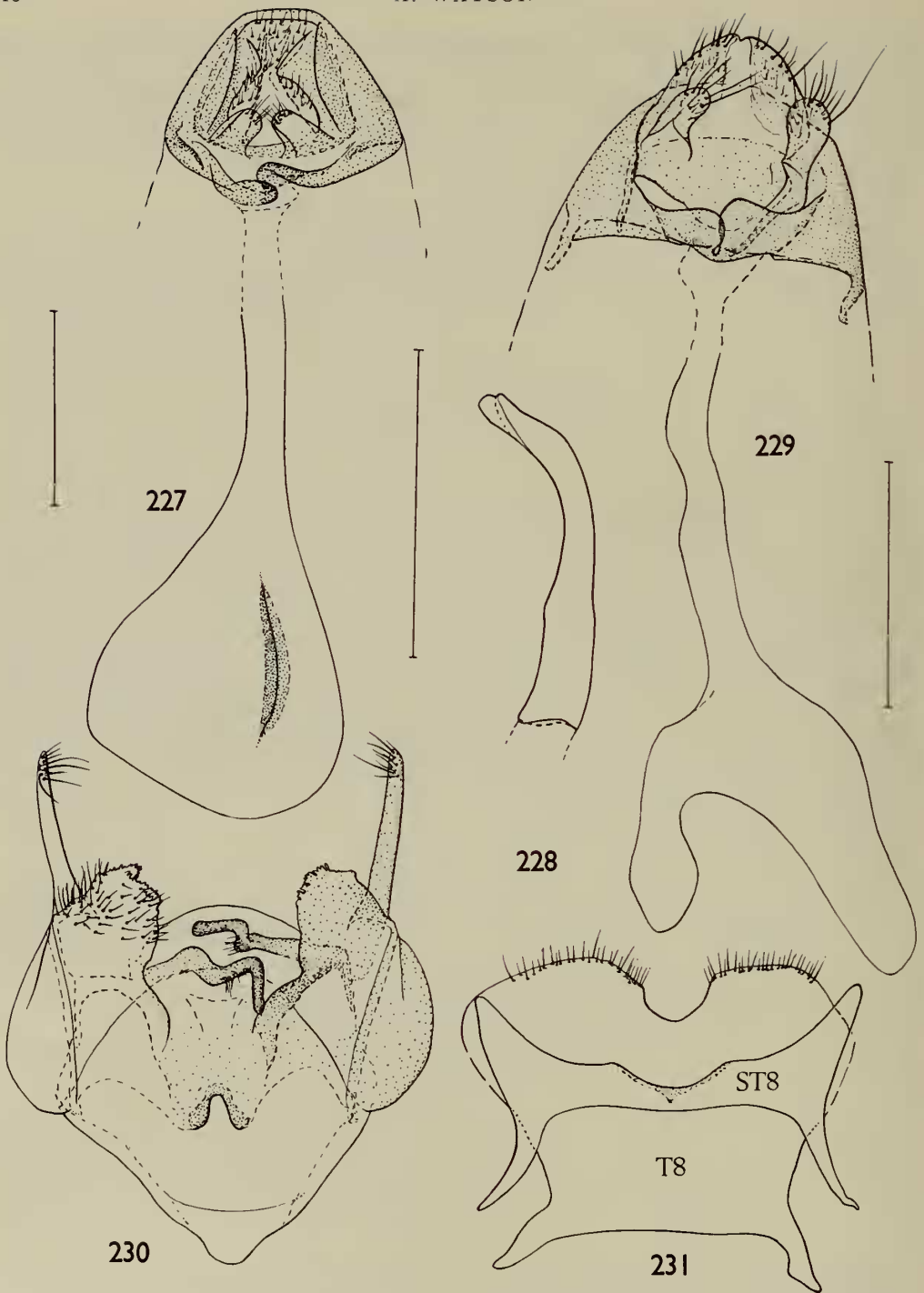
Wing. ♂ 15·5–19·0 mm. (45) ; ♀ 17·5–22·0 mm. (15).

The cell-spot on the fore wing in most specimens of this species is less elongate than that in the closely allied *patrana* and the fore wing is slightly more strongly falcate. The male and female genitalia also distinguish *ovata* from *patrana* : in the male the aedeagus is more slender apically and the socii less strongly arcuate apically, while in the female the signum is over twice as long as in *patrana*.

There is some individual variation in the postmedial fascia of the upper surface of the wings, which in a few males and one female is much broader than in the illustrated specimen, as in *patrana palleolus* (q.v.).

Distribution. The sympatry which exists between this species and *patrana* at Kwanhsien (Szechwan province) indicates that they are probably specifically distinct. The distribution and morphological similarity between *ovata* and *patrana* suggest a superspecific relationship (*Artenkreis*). Known from the following Chinese provinces : Shensi, Hupeh and Szechwan.

Type. Holotype ♂. China : S. Shensi, Tapaishan im Tsinling, 13.vii.1936 (*Höne*) ; Drepanidae genitalia slide No. 1009. In the Museum Koenig, Bonn.



FIGS. 227–231. *Callidrepana*, genitalia. 227, *patrana palleolus*, ♀. 228–231, *ovata*. 228, aedeagus ; 229, ♀ ; 230, ♂ ; 231, ♂ eighth tergite and sternite.

Paratypes. *Museum Koenig, Bonn.* China : 50 ♂, 14 ♀, S. Shensi, Tapaishan im Tsinling, 16.v–28.viii.1935, 1936 (*Höne*). *BM(NH).* China : 6 ♂, 1 ♀, S. Shensi, Tapaishan im Tsinling, 23.vi–25.vii.1935, 17.v–29.vii.1936 (*Höne*). 1 ♂, Ichang, viii.1888 ; 1 ♂, 1 ♀, Kwanhsien, 8.viii.1926, viii.1930 (*Franck*) ; 1 ♂, 2 ♀, Chang Yang, vi–vii.1888.

Callidrepana gemina sp. n.

(Pl. 12, figs. 370, 371 ; Text-figs. 232–238)

♂, ♀. Front of head dark reddish brown dorsally, dull yellowish orange ventrally ; vertex and antenna dull yellowish orange ; outer surface of palp yellowish brown. Antenna bipectinate. Collar whitish.

Thorax very pale yellow or yellowish white. Ground-colour of upper surface yellowish white ; colour-pattern as in Pl. 12, figs. 370, 372 ; apical markings, cell-spot and subterminal spots dark reddish brown, other markings yellowish brown ; costa dull yellowish orange at base ; both wings with bands of brilliantly lustrous scales along veins proximal to postmedial fascia, along distal edge of postmedial fascia and along basal half of costa. Cell-spot sometimes reduced in size, completely absent in one male examined. Venation of both wings as for *ovata* (q.v.). Under surface of both wings slightly paler than upper surface, but fore wing yellowish brown antero-proximally and with dark reddish brown crescent near apex at outer margin ; trace of postmedial fascia on hind wing ; well-marked reddish brown discocellular spot. Legs pale yellow but with front surface of tibia and tarsus of prothoracic leg greyish brown and femur yellowish orange.

Abdomen similar in colour to adjacent surface of hind wing.

Genitalia as in Text-figs. 232–238. Of special diagnostic importance in the male are the heavily sclerotized valves, the broad eighth tergite and the shape of the aedeagus.

The single postmedial fascia on the upper surface of both wings and the more proximal position of the postmedial fascia on the hind wing distinguish *gemina* from its closest relatives *patrana* and *ovata*. The genitalia of both sexes are also characteristic. The chief diagnostic characters in the male genitalia can usually be seen without dissection.

Two subspecies are known : the nominate subspecies (India) and *curta* (China).

Callidrepana gemina gemina ssp. n.

(Pl. 12, fig. 371 ; Text-figs. 232–235)

Distinguished from *curta* by the broader, reddish brown crescentic marking at the outer margin near apex of fore wing and by the male genitalia, especially the eighth tergite and sternite, aedeagus, valves and socii.

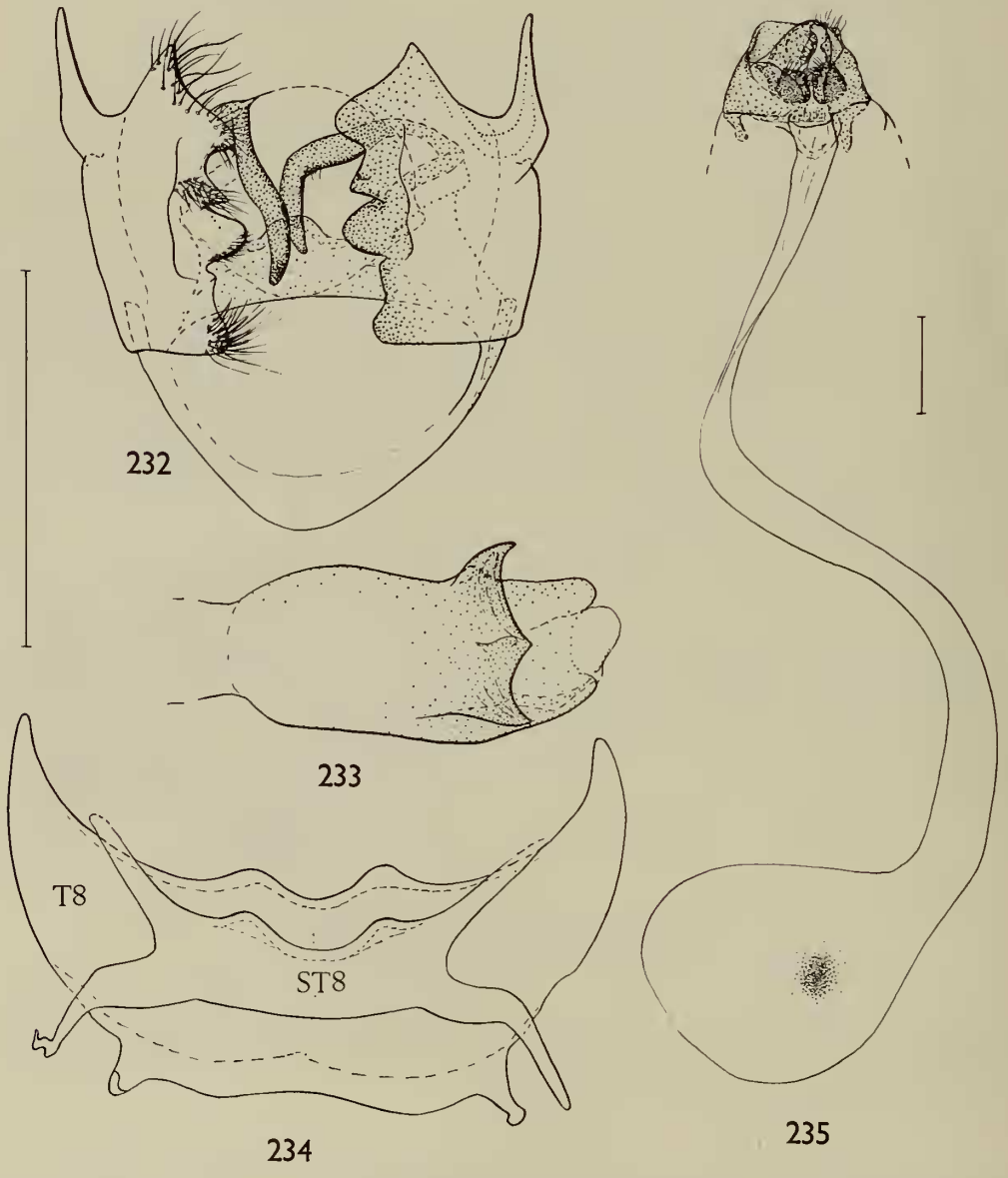
The female genitalia is figured in Text-fig. 235.

Wing. ♂ 15·0–17·0 mm. (6) ; ♀ 17·5–20·0 mm. (5).

Distribution. Only known from the type locality (N.E. India). A single male in the BM(NH) from Szechwan (China), which lacks a cell-spot on the fore wing may prove to represent this subspecies.

Holotype ♂. Darjeeling, Gopaldhara, 4720 ft. (*Stevens*) ; Drepanidae genitalia slide No. 994. In the BM(NH).

Paratypes. *BM(NH)*. N.E. India : 5♂, 5♀. Darjeeling, Gopaldhara, 4720 ft., ix.1916–ix.1918 (*Stevens*).



Figs. 232–235. *Callidrepana gemina gemina*, genitalia. 232, ♂ ; 233, aedeagus ; 234, ♂ eighth tergite and sternite ; 235, ♀.

Callidrepana gemina curta ssp. n.

(Pl. 12, fig. 370 ; Text-figs. 236–238)

♂. Distinguished from the nominate subspecies by the narrower, dull yellowish orange apical marking at the outer margin of the fore wing and by the male genitalia (Text-figs. 236–238).

♀. Not known.

Wing. ♂ 16·0–17·0 mm. (5).

Distribution. China (Kwangtung, Fukien, Chekiang).

Holotype ♂. China : Fukien, Kuatun, 16.v.1938 (*Klapperich*) ; Drepanidae genitalia slide No. 987. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 2 ♂, Kwangtung, Linping, iv,viii.1922 (*Höne*) ; 1 ♂, Chekiang, W. Tien-mu-shan, 27.vii.1932 (*Höne*). *BM(NH).* China : 1 ♂, Hupeh, Chang Yang, vi.1888 (*Pratt*) ; 1 ♂, Kwangtung, Linping, viii.1922 (*Höne*). *Zool. Museum, Berlin.* China : 2 ♂ (*Mell*) ; 1 ♂, Canton, Gao Fung (*Mell*).

Callidrepana hirayamai Nagano

(Pl. 12, fig. 372 ; Text-figs. 239–245)

Callidrepana hirayamai Nagano, 1917 : 492. [Fig.]

The identity of this species was revealed by Inoue (1961). Through the kindness of Dr. H. Inoue I was able to borrow a Japanese male of this species and to compare it with the Chinese material at Bonn and in the collection of the BM(NH).

The colour-pattern separates this species from *ovata* and *patrana* which it resembles to some extent externally : the dotted rectangular marking at the end of the cell on the fore wing is particularly diagnostic. The coloration is similar to *patrana*, but in many specimens the ground-colour is a dull greyish yellow as in the holotype of *hirayamai forcipulata*. The presence of an uncus, and the shape of the valves and socii are characteristic features of the male genitalia.

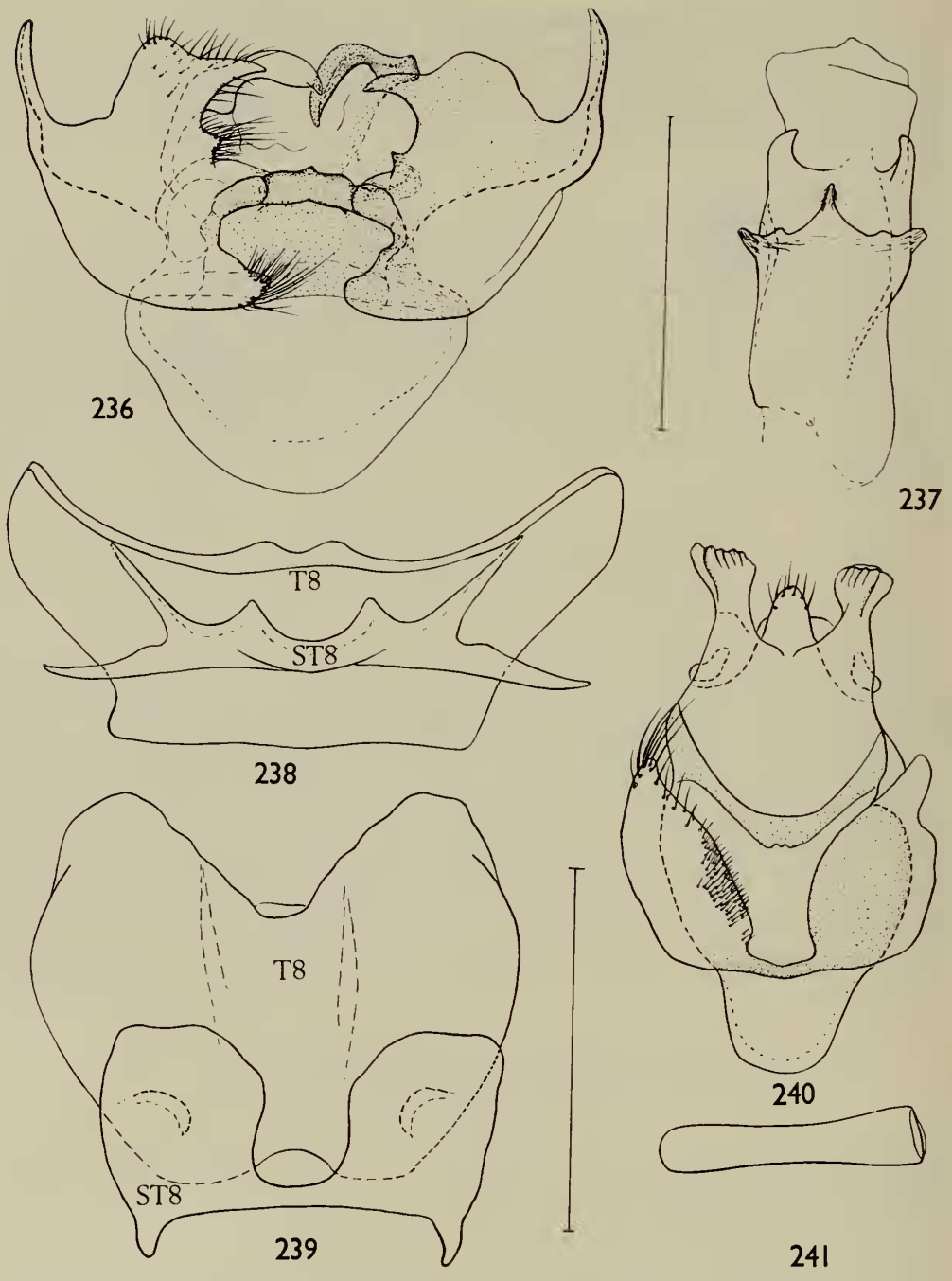
Two subspecies are known : the nominate subspecies (Japan) and *forcipulata* (China).

Callidrepana hirayamai hirayamai Nagano

(Text-figs. 239–241)

Callidrepana hirayamai Nagano, 1917 : 492. [Fig.]
Callidrepana hirayamai Nagano ; Inoue, 1956 : 370.
Callidrepana hirayamai Nagano ; Inoue, 1961 : 9. [Good fig.] [Translation into English of original description. Distribution.]
Callidrepana hirayamai Nagano ; Inoue, 1962 : 33. [Good fig.]
Callidrepana yakushimalis Yamamoto, 1960 : 334. [Good figs.] [Synonymized by Inoue, 1961.]

Separable from *forcipulata* by the male genitalia. As only one specimen of the

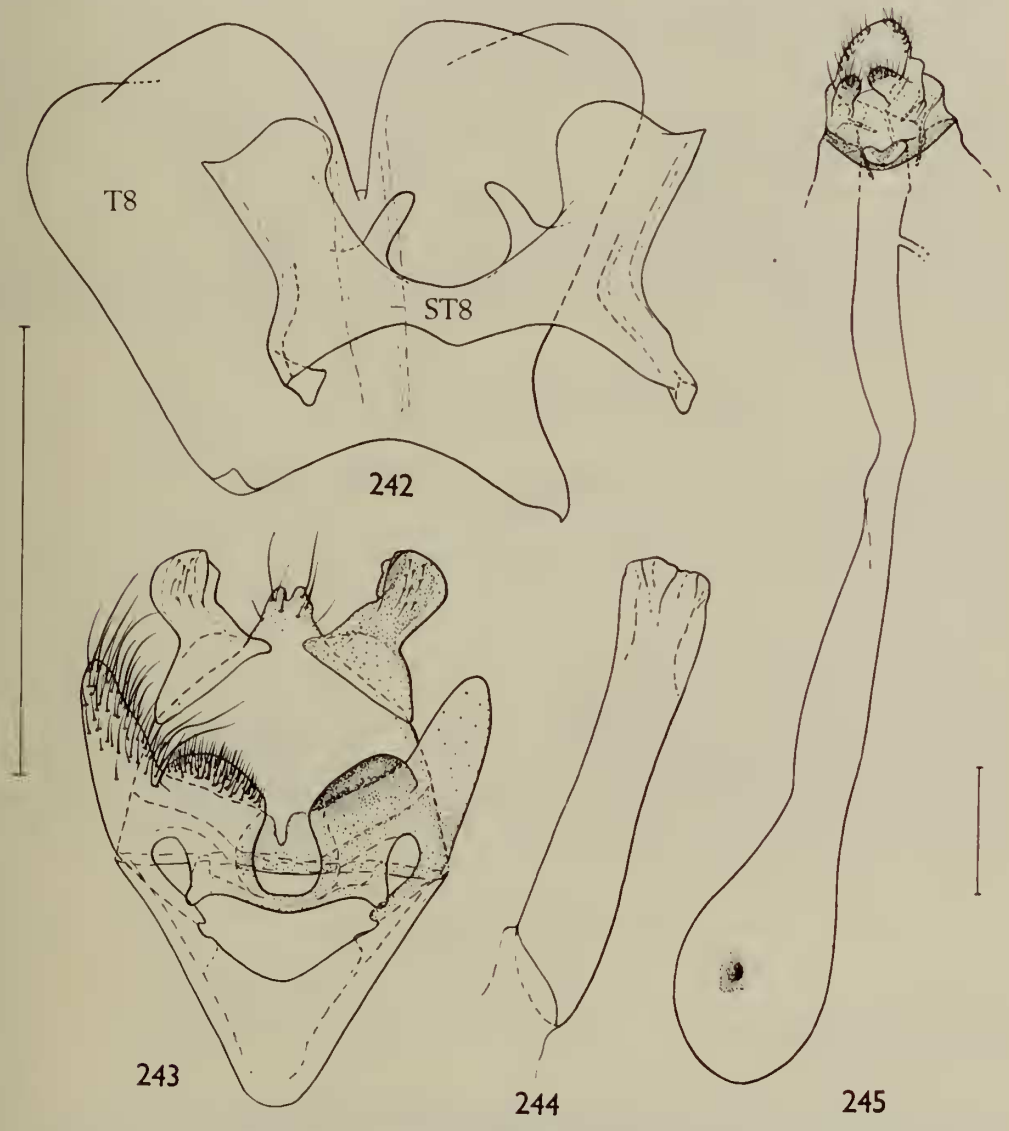


FIGS. 236–241. *Callidrepana*, ♂ genitalia. 236–238, *gemina curta*. 236, ♂ ; 237, aedeagus ; 238, eighth tergite and sternite. 239–241. *hirayamai hirayamai*. 239, eighth tergite and sternite ; 240, ♂ ; 241, aedeagus.

nominate subspecies has been seen (a male in the Inoue collection), no reliable comparison of external characters could be made but there appears to be little to distinguish the two subspecies.

Distribution. Japan (see Inoue 1956, 1961, 1962).

Types. *hirayamai*. Holotype ♂, [Japan], Kiso-yama, Shinano, 3.vii.1915 (*Hirayama*). Stated by Inoue (1956) to be probably lost.



FIGS. 242–245. *Callidrepana hirayamai forcipulata*, genitalia. 242, ♂ eighth tergite and sternite ; 243, ♂ ; 244, aedeagus ; 245, ♀.

yakushimalis. Holotype ♂, Japan, Kosugidani, Yakushima, 5.viii.1948 (*Yamamoto*). In Yamamoto collection. [Not seen.]

Callidrepana hirayamai forcipulata ssp. n.

(Pl. 12, fig. 372 ; Text-figs. 242–245)

Distinguished from the nominate subspecies by the male genitalia (in particular the shape of the eighth tergite and sternite, valves and uncus.

Wing. ♂ 13·5–18·0 mm. (15) ; ♀ 16·5–19·0 mm. (5).

Distribution. China (Fukien, Hunan). A single male from Ta-tsien-lou (Szechwan), in the BM(NH), and a male from Wenchow (Chekiang) and four females from West Tien-mu-Shan (Chekiang) in the Museum Koenig, Bonn, may also prove to represent this subspecies.

Holotype ♂. China : Hunan, Hoeng-Shan, 17.vii.1933 (*Höne*) ; Drepanidae genitalia slide No. 997. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 10 ♂, 5 ♀, Hunan, Koeng-Shan 900 m., 24.iv–11.xi.1933 (*Höne*) ; 4 ♂, 1 ♀, Fukien, Kuatun, 2300 m., 5.iv–2.vii.1938 (*Höne, Klapperich*).

DRAPETODES Guenée

(Pl. 12, fig. 373)

Drapetodes Guenée, 1857 : 424. Type-species *Drapetodes mitaria* Guenée, 1857 : 424, pl. 18, fig. 6, by monotypy. Type-locality : central India.
Drapetodes Guenée ; Gaede, 1931 : 14.

Drapetodes is characterized chiefly by the long labial palps, the non-falcate fore wing, the colour-pattern, the absence of an areole on the fore wing, and by the broad bifid uncus in the male genitalia.

This small, chiefly Indo-Malayan genus, is represented in Formosa and the Chinese provinces of Szechwan and Kwangtung. The specific identity of the material in the BM(NH) is doubtful. For example, the male from Chung-king (Szechwan) probably represents *mitaria* Guenée, while the female from Canton (the only other specimen seen from the mainland of China) could prove to be a specimen of either *mitaria*, or *circumscripta* Warren (1922 : 460, pl. 48i) (type-locality : Sumatra), or possibly *deumbrata* Warren (1922 : 459, pl. 48i) (type-locality : Bali).

THYMISTADOPSIS Warren

(Pl. 12, fig. 374 ; Text-figs. 220, 246–250)

Thymistadopsis Warren, 1922 : 461. Type-species *Problepsidis albidescens* Hampson, 1895 : 288 [Good fig.], by monotypy.
Thymistadopsis Warren ; Gaede, 1931 : 16.

No species other than the type-species has previously been placed in this genus, the nearest relative of which is possibly *Leucoblepsis* Warren (1922 : 462).

Distribution. *albidescens* is known only from the type-locality, in Sikkim, and

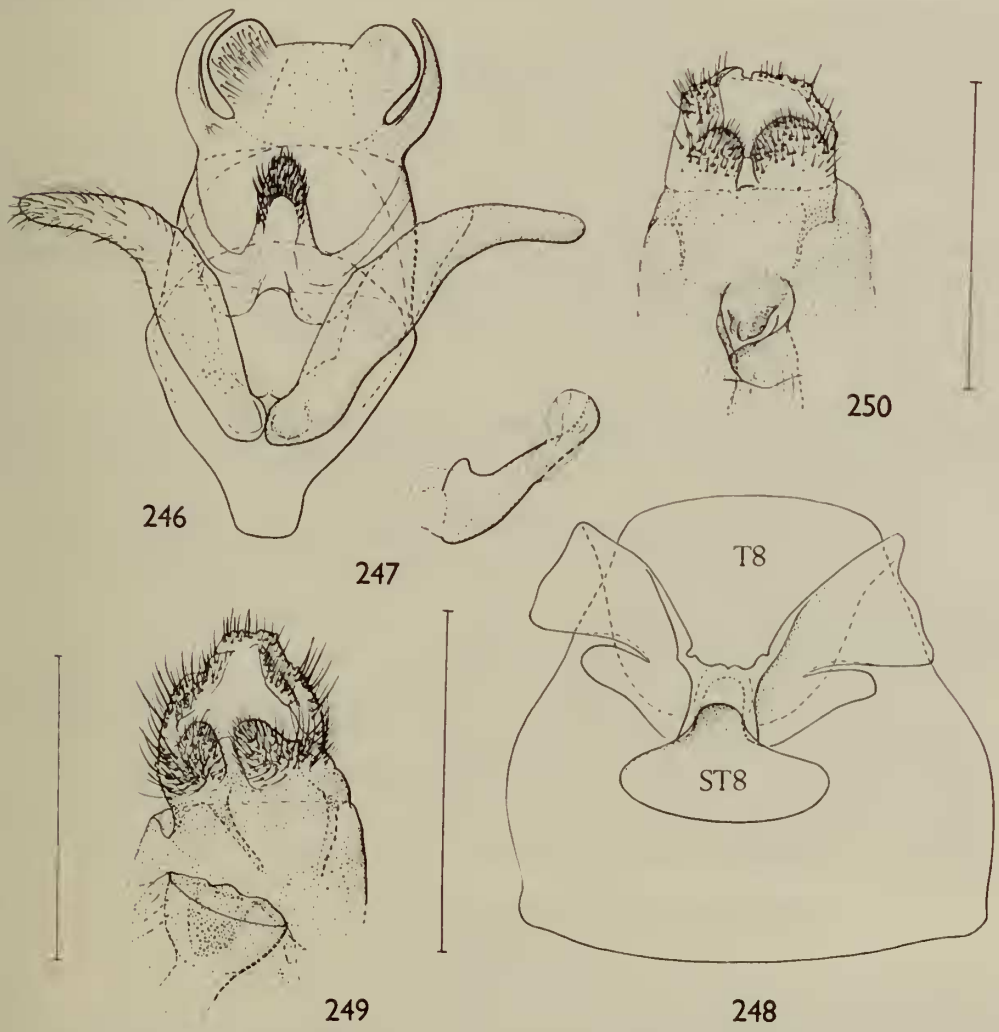
Assam (N.E. India) ; *trilinearia* has a similar range but occurs in China ; *undulifera* is known only from Tibet at an altitude of 10,500 ft.

Thymistadopsis trilinearia (Moore) comb. n.

(Pl. 12, fig. 374 ; Text-figs. 246–250)

Drepanodes trilinearia Moore, 1867 : 618.

Externally *trilinearia* is readily separable from the type-species by the absence of an outer marginal process on the fore wing, by the straight or weakly lunulate



FIGS. 246–250. *Thymistadopsis*, genitalia. 246–249, *trilinearia trilinearia*. 246, ♂ ; 247, aedeagus ; 248, ♂ eighth tergite and sternite ; 249, ♀ (ostium and anal papillae). 250, *trilinearia pulvis*, ♀ (ostium and anal papillae).

postmedial fascia on the fore wing, and by the pale postmedial fascia and the anastomosis of $Sc + R_1$ with Rs for a short distance distal to the cell in the hind wing. The genitalia of both sexes are closely similar to those of *albidescens* but are distinguishable by differences in the proportions of the various parts.

Two subspecies are known : the nominate subspecies (Sikkim and N.E. India), and *pulvis* (China).

Thymistadopsis trilinearia trilinearia (Moore)

(Text-figs. 246–249)

Drepanodes trilinearia Moore, 1867 : 618.
Drepana trilinearia (Moore) Hampson, [1893] : 338.
Drepana trilinearia (Moore) ; Hampson, 1897 : 288.
Drepana trilinearia (Moore) ; Warren, 1922 : 467. [Good fig., as ' bilinearia '.]
Drepana trilinearia (Moore) ; Gaede, 1931 : 30.
Tridrepana trisulcata Warren, 1896 : 340. [Synonymized by Hampson, 1897 : 288.]
Tridrepana trisulcata Warren ; Gaede, 1931 : 31.

In some females the area between the antemedial fascia and the postmedial fascia on the fore wing is heavily suffused with dark brown. In the remaining females and all the males studied this area is greyish white.

Separated from *pulvis* by the ostium in the female genitalia. (The male of *pulvis* is not known.)

Distribution. Sikkim and N.E. India.

Type. LECTOTYPE ♂, here selected, labelled : Darjeeling ; Moore Coll. 94–106 ; Drepanidae genitalia slide No. 745. In the BM(NH).

Thymistadopsis trilinearia pulvis (Oberthür) **stat. n., comb. n.**

(Pl. 12, fig. 374 ; Text-fig. 250)

Drepana pulvis Oberthür, 1916 : 375.
Drepana pulvis Oberthür, 1917 : pl. 428. [Good fig.]
Albara pulvis (Oberthür) Gaede, 1933 : 169.

The type is the only known specimen apart from a doubtfully identified female from Tu-pa-keo (Szechwan) in the BM(NH).

Distinguished from the nominate subspecies by the female genitalia.

Type. Holotype ♀, China, Szechwan, Siao-Lou, 1903 (Chasseurs indigènes du P. Déjean) ; Drepanidae genitalia slide No. 746. In the BM(NH).

Thymistadopsis undulifera (Hampson) **comb. n.**

(Text-fig. 220)

Drepana undulifera Hampson, 1900 : 228. [Good fig.]
Drepana undulifera Hampson ; Strand, 1911 : 202.
Drepana undulifera Hampson ; Gaede, 1931 : 28.

Until male specimens become available the affinities of *undulifera* will probably

remain doubtful. However, an examination of the female genitalia and of external characters such as the shape of the antennae, the wing shape, the colour-pattern and the coloration has shown no great discordance between *undulifera* and the other two species of *Thymistadopsis* except for the rather abbreviated colour-pattern of the upper surface.

Distribution. China (Tibet).

Material examined. Type. LECTOTYPE ♀ [not ♂ as stated by Hampson, 1900], here selected, labelled : Yatung [10,500′], Tibet, *A. E. Hobson*, 98–201 ; Drepanidae genitalia slide No. 1707. In the BM(NH).

Paralectotypes. *BM(NH)*. China : 2 ♀, type locality.

DEROCA Walker

(Pl. 12, fig. 375)

Deroca Walker, 1855 : 822. Type-species *Deroca hyalina* Walker, 1855 : 823, by monotypy.
Deroca Walker ; Watson, 1957a : 129. [Revision.]

Probably most closely allied to *Callicilix* Butler but distinguished from it by the colour-pattern and the lack of yellow coloration on the wings, differences in the male genitalia, and the presence of well-developed mid tibial spurs on the hind leg.

Distribution. N. India, N. Burma, China, Formosa, Korea and Japan. (See Table 1.)

This genus has been revised by the present author (Watson, 1957a) and no further material has been made available since this revision. The following list includes the species and subspecies known to occur in China together with their known distribution. (All four described species of *Deroca* occur in China.)

Deroca hyalina Walker, 1855 : 823. India, Burma, China.
D. hyalina latizona Watson, 1957a : 134. China (Kwangtung, Szechwan, Hunan, Kiangsi, Fukien, Chekiang). See Plate 12, fig. 375.
Deroca hidda Swinhoe, 1900 : 306. Sikkim, N. India, Burma, China.
D. hidda bifida Watson, 1957a : 137. N. India, China (N. Yunnan).
Deroca pulla Watson, 1957a : 139. China (Szechwan, Hupeh).
Deroca inconclusa (Walker), 1856 : 1727. N. India, Burma, China, Formosa, Korea, Japan.
D. inconclusa inconclusa (Walker). N. India, Burma, China (Szechwan, Yunnan).
D. inconclusa carinata Watson, 1957a : 143. China (Shensi).

CALLICILIX Butler

(Pl. 12, figs. 376, 377 ; Text-figs. 251–257)

Callicilix Butler, 1885 : 124. Type-species *Callicilix abraxata* Butler, 1885 : 124, by monotypy.

Platypteryx nguldoe Oberthür, 1893, the only species subsequently added to *Callicilix*, has been relegated to subspecific rank.

The genus is distinguished, in both sexes, from the closely related *Auzata* Walker by the bipectinate antennae and, as already indicated by Inoue (1962), by the fact that the outer spur of the middle pair on the hind tibia is very small and partly hidden by scales.

Distribution. Japan, China and N.W. India.

Callicilix abraxata Butler

(Pl. 12, figs. 376, 377 ; Text-figs. 251–257)

Callicilix abraxata Butler, 1885 : 124.

C. abraxata is known to have two subspecies. A single male from ' Masuri ' [N.W. India, Mussoorie] in the BM(NH) will probably prove to represent a third subspecies.

Callicilix abraxata abraxata Butler

(Pl. 12, fig. 376 ; Text-figs. 251–254)

Callicilix abraxata abraxata Butler ; Strand, 1911 : 198.
Callicilix abraxata Butler ; Gaede, 1931 : 4. [*Partim.*]
Callicilix abraxata abraxata Butler ; Inoue, 1962 : 17, pl. 2, figs. 21, 22, figs. 45–60, (antenna, venation, hind tibia, ♂ and ♀ genitalia).

This subspecies is distinguished from *nguldoe* by the colour-pattern (Pl. 12, fig. 376, and colour-plate in Inoue (1962)) and in the male genitalia by the shape of the eighth sternite and uncus.

Distribution. Japan. The localities have been listed by Inoue (1956) (in English) and (1962) (in Japanese).

Type. I select as LECTOTYPE a ♀ in the collection of the BM(NH), labelled ' *Callicilix abraxata* Butler, type ; Yezo [Japan] ; Drepanidae genitalia slide No. 27 '. The locality of this specimen corresponds with that given by Butler in the original description and it is doubtless one of the specimens, or the only specimen, before Butler when he described this species.

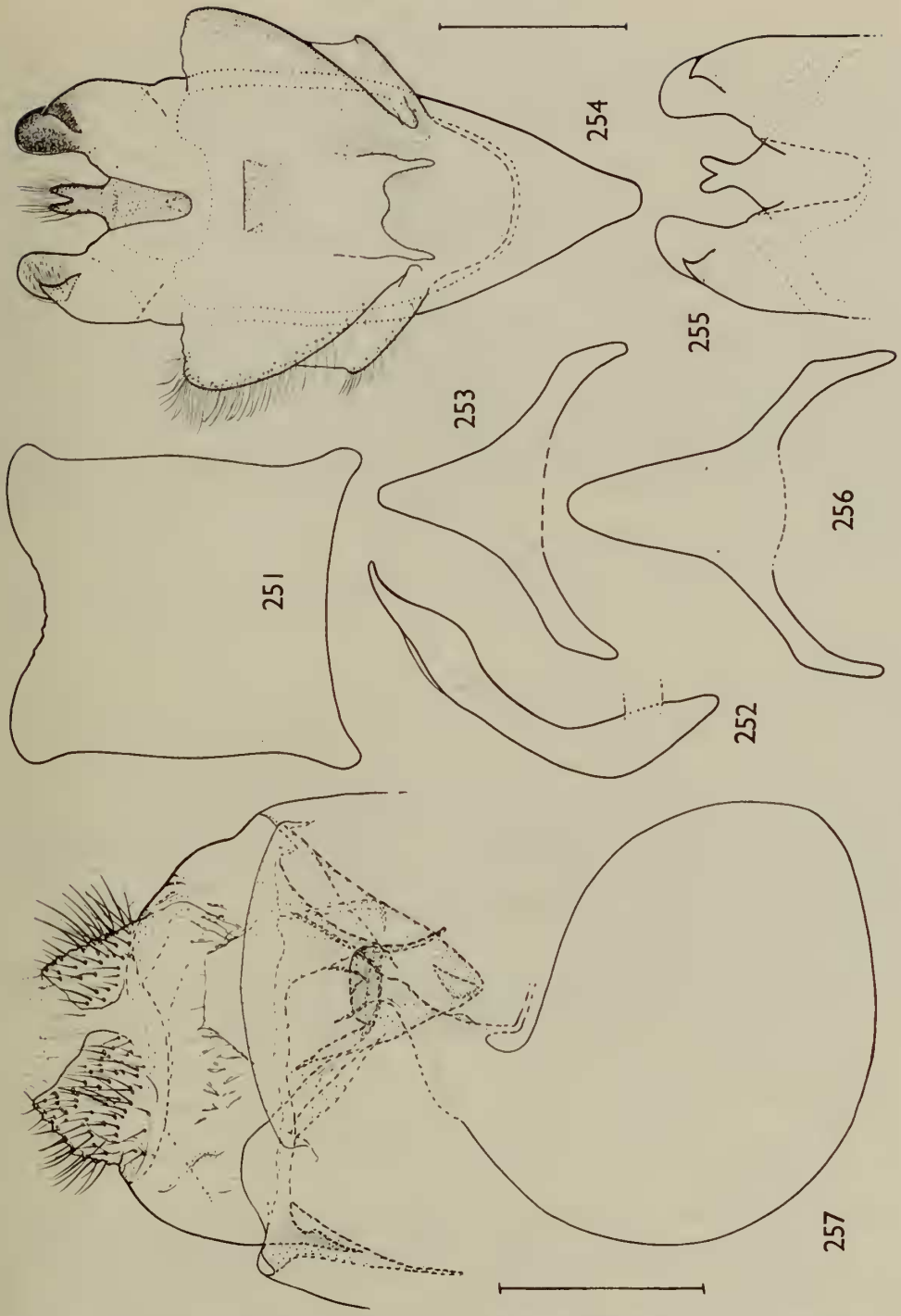
Callicilix abraxata nguldoe (Oberthür)

(Pl. 12, fig. 377 ; Text-figs. 255–257)

Platypteryx nguldoe Oberthür, 1893 : 22. [Good fig.]
Callicilix abraxata nguldoe (Oberthür) Strand, 1911 : 198. [Poor fig.]
Callicilix abraxata var. *nguldoe* (Oberthür) ; Gaede, 1931 : 4.
Callicilix abraxata formosana Okano, 1960 : 11. **syn. n.**

This is distinguished from the nominate subspecies by the colour-pattern (Pl. 12, fig. 377, and colour-plate in Oberthür (1893)), and in the male genitalia by the shape of the eighth abdominal sternite and uncus. The female genitalia are illustrated in Text-fig. 257.

Distribution. There are Chinese specimens from Oberthür localities (Szechwan



FIGS. 251–257. *Callicilix*, genitalia. 251–254, *abraxata abraxata*, ♂. 251, eighth tergite ; 252, aedeagus ; 253, eighth sternite ; 254, ♂. 255–257, *abraxata nguldoe*, 255, ♂ (part) ; 256, ♂ eighth sternite ; 257, ♀.

and Tibet), and others from Kweichow and Hunan in the BM(NH). There are no records of this subspecies from the eastern coastal provinces of China in spite of the intensive collecting carried out there by Höne, although its presence in Formosa suggests that it may yet be found on the adjacent mainland of China.

Material examined. Type of *nguldoe*. LECTOTYPE ♀, here selected, labelled : de Ta-tsien-lou à Moupin, Mai, Juin 1892 (Chasseurs Thibétains). In the BM(NH). This specimen was illustrated by Oberthür (1893).

Type of *formosana*. Holotype ♂, Central Formosa, Lushan, Nantowhsien, ix.1959 ; in the Okano collection.

Other material. *BM(NH)*. China, Tibet : 1 ♂, 1 ♀, Tibet, ' frontière orientale ', 1905 (*Déjean*). Szechwan : 6 ♂, 1 ♀, Mt. Omei, vi–vii.1890, 1892, 28–31.vii.1921 ; 3 ♂, Kwanhsien, 14.viii.1925, 11.viii.1926 (*Franck*), viii.1930 (*Franck*) ; 1 ♂, 2 ♀, Tien-tsuen, 1897 (*Déjean*), 1899, 1903 (*Déjean*) ; 1 ♂, 2 ♀, Siao-lou, 1900, 1908 ; 1 ♂, 1 ♀, Siao-lou, Tchang-chau-pin, 1899 ; 1 ♂, Moupin, 1898 ; 1 ♀, Ta-tsien-lou, 1910. Kweichow : 1 ♂, 1 ♀ vi–vii.1890. Hunan : 3 ♂ (*Pratt*). *U.S. National Museum*. China, Szechwan : 1 ♂, Mt. Omei (*Graham*) ; 1 ♂, Lingi Si, 3500 ft. (*Graham*).

AUZATA Walker

Auzata Walker, [1863] : 1620. Type-species *Auzata semipavonaria* Walker, [1863] : 1620, by monotypy.
Auzata Walker ; Watson, 1959 : 232. [Revision.]
Gonocilix Warren, 1896 : 337. Type-species *Gonocilix ocellata* Warren, 1896 : 337 by monotypy. [Synonymized by Gaede, 1931 : 4.]

Distinguished from its nearest relative *Callicilix* Butler by the lamellate antennae, and the presence of well-developed mid-tibial spurs on the hind leg.

Distribution. N. India, China, Korea, Japan, and S.E. Russia. (See Table 1.)

Auzata was revised by the present author in 1959 and no additional material has been seen since then. The following list contains the species of this genus known to occur in China, together with their distribution.

Auzata chinensis Leech, 1898 : 362. China.
A. chinensis Leech. China (Hunan, Szechwan).
A. chinensis prolixa Watson, 1959 : 238. China (Chekiang).
A. chinensis arcuata Watson, 1959 : 242. China (S. Shensi, Szechwan).
Auzata simpliciata Warren, 1897 : 13. N. India, China (N. Yunnan).
Auzata superba Butler, 1878 : 52. China, Japan, Korea, Quelpart Is., S.E. Russia.
A. superba cristata Watson, 1959 : 248. China (Chekiang, Shansi, and probably Shensi).
Auzata minuta Leech, 1898 : 362. China.
A. minuta minuta Leech. China (Hupeh, Szechwan, Kweichow, Yunnan).
A. minuta spiculata Watson, 1959 : 253. China (Chekiang, and probably Shansi).
Auzata ocellata (Warren), 1896 : 337. N. India, N. Burma, China, (Fukien).

MACROCILIX Butler

(Pl. 13, figs. 379–382 ; Text-figs. 258–270)

Macrocilix Butler, 1886 : 18. Type-species *Argyris mysticata* Walker, [1863] : 1617, by monotypy.
Macrocilix Butler ; Gaede, 1931 : 5.
Macrocilix Butler ; Inoue, 1962 : 8. [Key to, and figs. of, Japanese species.]
Dipriodonta Warren, 1897 : 14. Type-species *Dipriodonta sericea* Warren, 1897 : 14, by monotypy. [Synonymized with *Macrocilix* by Gaede, 1931 : 5.]
Sewa Swinhoe, 1900 : 591. Type-species *Abraxas orbiferata* Walker, 1862 : 1126, by monotypy. [Synonymized with *Macrocilix* by Gaede, 1931 : 5.]

This genus comprises five species : *mysticata* Walker (see below), (India, Burma, China, Formosa, Japan) ; *maia* Leech (see p. 133) (India, China, Japan, Malaya, Sumatra) ; *taiwana* Wileman (see p. 135) (Formosa) ; *orbiferata* Walker (see p. 134) (India, Sikkim, Burma, China, Malaya, Java, Borneo) ; and *sericea* Warren, 1897 : 14 (N. India). (See Table 1.) The latter species is doubtless not congeneric with the type-species of *Macrocilix* and will have to be transferred from *Macrocilix* when its affinities can be more closely studied.

Macrocilix is probably most closely allied to *Auzata* Walker from which it can be distinguished by the yellow and grey, or yellow and black area at the anal angle of the upper surface of the hind wing, and by the genitalia of both sexes.

Macrocilix mysticata (Walker)

(Pl. 13, figs. 381, 382 ; Text-figs. 258–264)

Argyris mysticata Walker, [1863] : 1617.

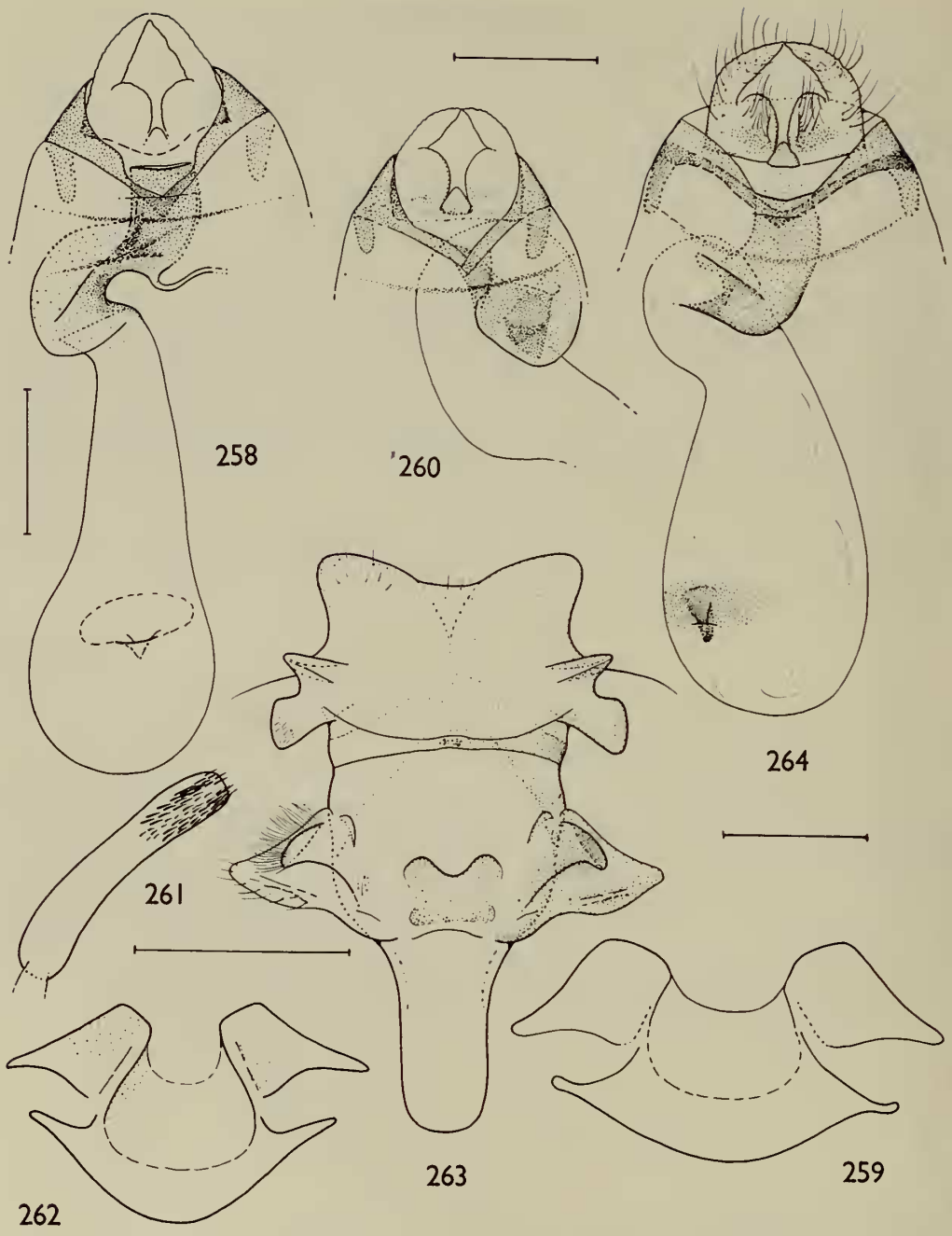
Easily distinguished from the closely allied *maia* Leech by the colour-pattern and the genitalia of both sexes. There are three subspecies, each of which is reviewed below.

Distribution. N. India, Sikkim, N. Burma, China, Formosa and Japan. The type of *mysticata* ab. *flavotincta* Wileman, 1915 : 19 will probably prove to represent a new Formosan subspecies when further material becomes available ; the hind wing pattern is similar to that of *mysticata watsoni*, whereas the fore wing pattern most closely resembles that of the nominate subspecies.

Macrocilix mysticata mysticata (Walker)

(Text-figs. 261–264)

Macrocilix mysticata (Walker) ; Butler, 1886 : 19. [Good fig.]
Macrocilix mysticata (Walker) ; Strand, 1911 : 197. [Good fig.]
Macrocilix mysticata (Walker) ; Gaede, 1931 : 5.
Macrocilix mysticata mysticata (Walker) ; Inoue, 1958 : 12.
Macrocilix mysticata bidentata Bryk, 1943 : 5. [Good fig.] [Synonymized with *mysticata* by Inoue, 1958 : 12.]



FIGS. 258–264. *Macrocilix*, genitalia. 258, 259, *mysticata watsoni*. 258, ♀ ; 259, ♂ eighth sternite. 260, *mysticata brevinotata*, ♀. 261–264, *mysticata mysticata*. 261, aedeagus ; 262, ♂ eighth sternite ; 263, ♂ ; 264, ♀.

Distinguished from subspecies *watsoni* Inoue by the male and female genitalia, from *brevinotata* ssp. n. by the female genitalia, and from both *watsoni* and *brevinotata* by the colour-pattern of the wings. (See Text-figs.)

Type. Holotype ♀ [No locality data ; ' North Hindostan ' according to original description] ; (Col. Buckley) ; Drepanidae genitalia slide No. 31. In the BM(NH).

Distribution. N. India, Sikkim ; N. Burma.

Macrocilix mysticata watsoni Inoue

(Pl. 13, fig. 382 ; Text-figs. 258, 259)

Macrocilix mysticata watsoni Inoue, 1958 : 11.
Macrocilix mysticata watsoni Inoue, 1962 : 10. [Good figs.]

Separated from the nominate subspecies and *brevinotata* by the colour-pattern of the wings and the female genitalia (Text-fig. 258), and from the nominate subspecies also by the eighth sternum of the male genitalia (Text-fig. 259).

Distribution. Japan and China. There are specimens from the Chinese provinces of Fukien, Chekiang, Kwangtung and Yunnan, in the Höne collection at Bonn, and from Szechwan and Yunnan in the BM(NH).

Macrocilix mysticata brevinotata ssp. n.

(Pl. 13, fig. 381 ; Text-fig. 260)

♀. Distinguished from *watsoni* and the nominate subspecies by the female genitalia and the colour-pattern. The abbreviated postmedial fascia on the hind wing is particularly diagnostic.
Wing. 19·0–23·0 mm. (5).
♂. Not known.

Distribution. This subspecies is probably restricted to the higher regions of Szechwan. The subspecies *watsoni* also occurs in this province (1 ♀, Kwanhsien, in BM(NH)), at a much lower altitude, but no intermediates between these two subspecies have been captured.

Holotype ♀. China : Szechwan, Tu-pa-keo, 7400 ft., 4.ix.1929 (Kelley-Roosevelt Expedition) ; Drepanidae genitalia slide No. 249. In the BM(NH).

Paratypes. *BM(NH)*. 5 ♀, type locality, 3–7.ix.1929 (Kelley-Roosevelt Expedition).

Macrocilix maia (Leech)

Argyris maia Leech, 1888 : 647. [Good fig.]
Macrocilix maia (Leech) Leech, 1898 : 360.
Macrocilix maia (Leech) ; Gaede, 1931 : 5.
Macrocilix maia (Leech) ; Inoue, 1962 : 10. [Good figs. : including genitalia.]

Readily distinguished from *mysticata* Walker by the distinctive colour-pattern and genitalia of both sexes (see Inoue, 1962).

Distribution. India, China (1 ♀ from Shantung, Tsingtau ; in the Museum Koenig, Bonn), Korea, Japan, Malaya, Sumatra. A study of some of the available material of this species has shown the presence of two new subspecies ; one in India, and the other in Sumatra (and probably also Malaya), The single female from China mentioned above almost certainly belongs to the nominate subspecies, which occurs in Japan and Korea.

Type. Holotype ♀, Korea, Gensan, vii.1887 (*Leech*) ; Drepanidae genitalia slide No. 1612. In the BM(NH).

Macrocilix orbiferata (Walker)

(Pl. 13, fig. 379 ; Text-figs. 265–270)

Abraxas orbiferata Walker, 1862 : 1126.

This species can be separated easily from *maia* Leech and *mysticata* Walker by the colour-pattern of the wings, the lamellate antennae, and the genitalia of both sexes. From *taiwana* Wileman (Pl. 13, fig. 380), *orbiferata* is distinguished by the colour-pattern and by the female genitalia (the male of *taiwana* is unknown).

Two subspecies are known : the nominate subspecies (Indo-Chinese and Malayan Subregions), and *cilicoides* Snellen (1889 : 9, pl. 1, fig. 3) (Java) (see Text-figs. 269, 270).

Macrocilix orbiferata orbiferata (Walker)

(Pl. 13, fig. 379)

Macrocilix orbiferata (Walker) ; Hampson, [1893] : 330.
Macrocilix orbiferata (Walker) ; Strand, 1911 : 197.
Macrocilix orbiferata (Walker) ; Gaede, 1931 : 6.
Sewa orbiferata (Walker) Swinhoe, 1900 : 591.
Sewa orbiferata (Walker) ; Warren, 1922 : 447. [Good fig.]
Argyris insignata Moore, 1867 : 645. [Synonymy accepted from Hampson [1893] : 330.]

Distinguished from *orbiferata cilicoides* Snellen (1889) by the colour-pattern of the fore wing. No reliable diagnostic features have been found in the female genitalia, though little *cilicoides* material was available for study.

Distribution. N. India, N. Burma, China (Szechwan, Chekiang, Fukien), Malaya and Borneo. Two females from the Chinese province of Hunan (in the BM(NH)) also probably belong to this subspecies.

Types. *orbiferata*. Holotype ♂, Borneo, Sarawak. In the Hope Department Museum, Oxford.

insignata. The type material originated from ' Bengal ' according to the original description. It formed part of the A. E. Russell collection which is apparently lost (see Horn and Kahle, 1937 : 380).

Macrocilix taiwana Wileman

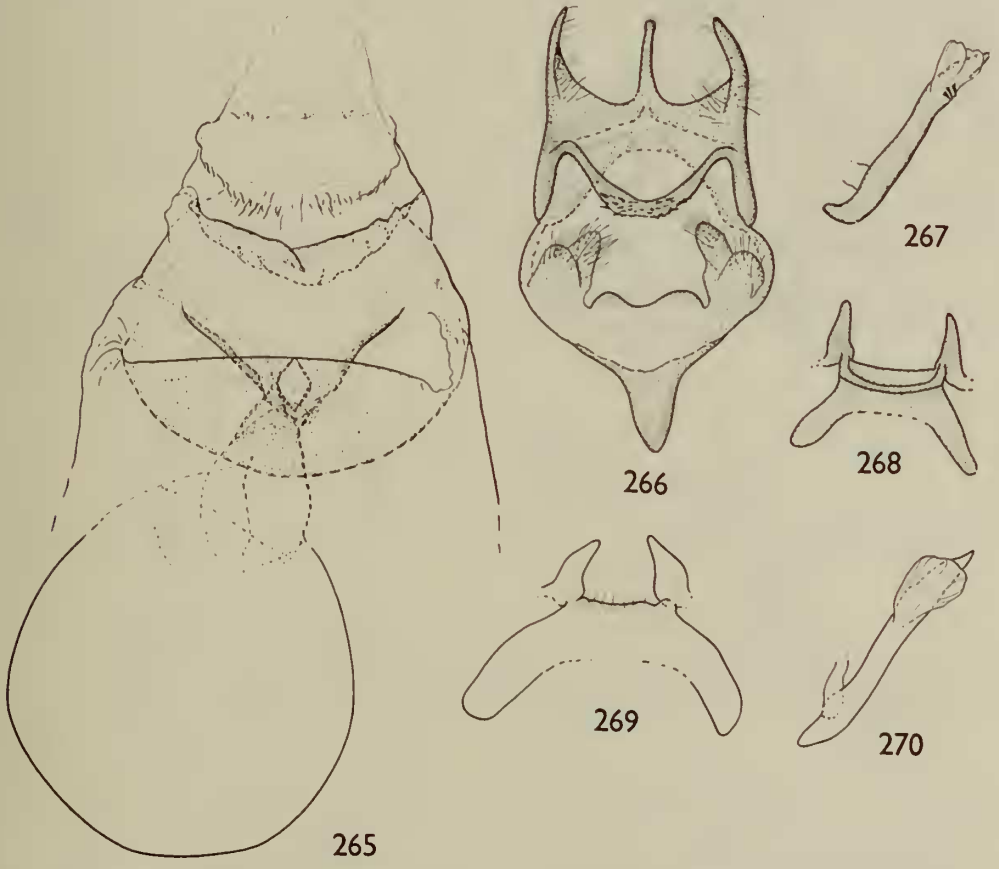
(Pl. 13, fig. 380)

Macrocilix taiwana Wileman, 1911 : 148.

Distinguished from its closest apparent relative, *orbiferata*, by the colour-pattern and by the female genitalia (the male is unknown). The chief distinguishing characters in the genitalia are the signum which extends for almost the whole length of the corpus bursae, the presence of a deep invagination of the posterior margin of the eighth abdominal sternite into which the ostium opens, and the ductus bursae which is more heavily sclerotized than in *orbiferata* and is strongly constricted a short distance before the ostium.

Distribution. Unknown outside Formosa.

Type. LECTOTYPE ♀, here selected, labelled : ♀, Arizan, Formosa, 7300 ft., 22.viii.1908 (*A. E. Wileman*) ; 1225 [?] ; Wileman Coll., B.M. 1929–261 ; *Macro-*



FIGS. 265–270. *Macrocilix*, genitalia. 265–268, *orbiferata orbiferata*. 265, ♀ ; 266, ♂ ; 267, aedeagus ; 268, ♂ eighth sternite. 269, 270, *orbiferata cilicoides*, ♂. 269, eighth sternite ; 270, aedeagus.

cilix taiwana sp., Type ♀ ; Drepanidae genitalia slide No. 1615. In the BM(NH).

Paralectotype. ♀, Formosa, Rantaizan, 7500 ft., 11.v.1909 (*A. E. Wileman*). In the BM(NH).

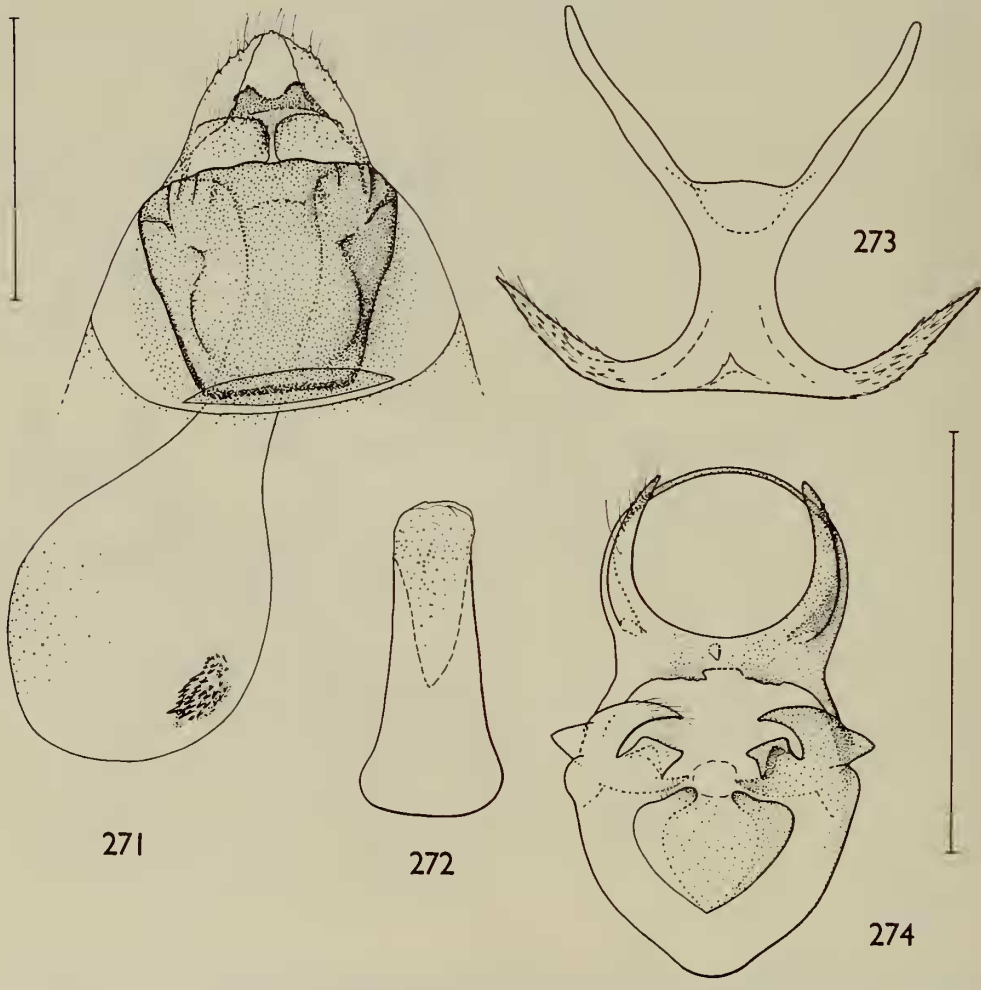
Other material. Formosa : 3 ♀, type-locality, 16.iii.–20.ix (*Wileman*).

HYALOSPECTRA Warren

(Pl. 13, fig. 378)

Hyalospectra Warren, 1906 : 62. Type-species *Hyalospectra grisea* Warren, 1906 : 62, by monotypy.

A comparison of *hyalinata* Moore, the only known Chinese species of *Hyalospectra*,



Figs. 271–274. *Hyalospectra hyalinata*, genitalia. 271, ♀ ; 272, aedeagus ; 273, ♂ eighth sternite ; 274, ♂.

with the type-species from New Guinea has shown that these two species are certainly not congeneric and that *hyalinata*, together with *arizana* Wileman (1911 : 149), will have to be removed from *Hyalospectra* when further revisionary work has shown where the affinities of *hyalinata* and *arizana* lie.

Hyalospectra hyalinata (Moore)

(Pl. 13, fig. 378 ; Text-figs. 271–274)

Comibaena hyalinata Moore, 1867 : 638.
Hyalospectra hyalinata (Moore) ; Warren, 1922 : 451. [Pl. 48e (as *hyalicosta*).]
Hyalospectra hyalinata (Moore) ; Gaede, 1931 : 9.
Hyalospectra postfasciata Bryk, 1943 : 7. **syn.n.**

Distinguished from *arizana* Wileman (1911 : 149) by the broader subterminal fasciae of the wings, and the presence of a brown medial shade on the fore wing. No comparison of the genitalia could be made because of the badly damaged abdomen of the holotype of *arizana*, the only specimen of this species. The genitalia of *hyalinata* are figured in Text-figs. 271–274.

Distribution. N. India, Sikkim, N. Burma, China (N. Yunnan : ex. in BM(NH) and Museum Koenig, Bonn). Specimens from Malaya, Thailand and Ceylon, in the BM(NH), probably also represent this species.

Types. *hyalinata*. LECTOTYPE ♂, here selected, labelled : Bengal ; N.E. Bengal ; Russell ; *Comibaena hyalinata* type Moore [two labels] ; Moore Coll. 94–106. In the BM(NH).

postfasciata. Holotype ♀ [not ♂ as stated by Bryk, 1943 : 7], N.E. Burma, Kambaiti, 200 m., 9.vi.1934 (*Malaise*) ; in the Naturhistoriska Riksmuseet, Stockholm.

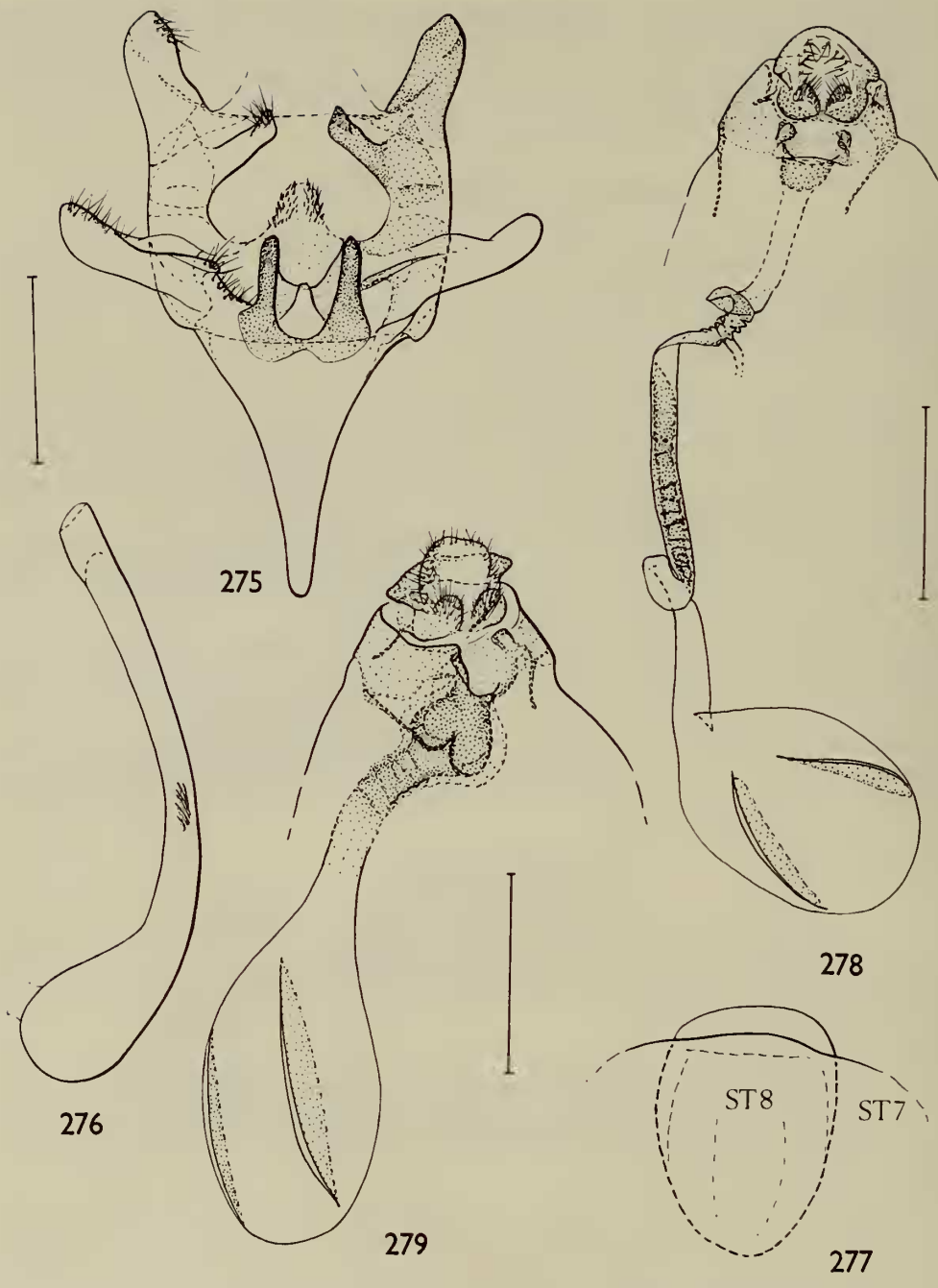
CILIX Leach

(Pl. 13, figs. 383, 386–388 ; Text-figs. 275–290)

Cilix Leach, [1815] : 135. Type-species *Bombyx compressa* Fabricius, 1777 : 279, by monotypy.
[*B. compressa* is a junior subjective synonym of *Phalaena glaucata* Scopoli, 1763 : 221.]
Cilix Leach ; Strand, 1911 : 204.
Cilix Leach ; Gaede, 1931 : 37.

This is an easily recognizable genus of small white species distinguished from other white Drepanidae by the irregularly shaped medial marking on the fore wing, and, except for *depalpata*, by the anastomosis in the fore wing of $Sc + R_1$ with the cell near its base (see Inoue, 1962).

Seven species are known : *glaucata* Scopoli (1763 : 221) (Western Europe and North Africa) ; *asiatica* Bang-Haas (1907 : 70), **stat. n.** (Middle-East) ; *depalpata* Strand (1911 : 204), **sp. rev.** (N.W. India, Afghanistan) ; *filipjevi* Kardakoff (Russia, China, Korea, Japan) ; *patula* sp. n. (China) ; *danieli* sp. n. (China), and *tatsienluica* Oberthür (China). The four species represented in China are dealt with below. (See Table 1.)



FIGS. 275–279. *Cilix filipjevi*, genitalia. 275–278, *filipjevi filipjevi*. 275, ♂; 276, aedeagus; 277, ♂ eighth sternite and posterior margin of eighth tergite; 278, ♀; 279, *filipjevi malivora*, ♀.

Cilix filipjevi Kardakoff

(Pl. 13, figs. 386, 387 ; Text-figs. 275–279)

Cilix glaucata filipjevi Kardakoff, 1928 : 417. [Fig.]

This species is readily separable from the west European *glaucata* Scopoli (1763 : 221) by small differences in the colour-pattern (see plate) and by significant differences in the genitalia of both sexes. The species *patula* sp. n. and *danieli* sp. n., which are characterized by a broader medial band on the fore wing and by the male and female genitalia, are probably the closest relatives of *filipjevi*.

Two subspecies are known : the nominate subspecies (U.S.S.R., Korea and China) and *malivora* Inoue (Japan).

Cilix filipjevi filipjevi Kardakoff

(Pl. 13, fig. 386 ; Text-figs. 275–278)

Cilix glaucata filipjevi Kardakoff ; Gaede, 1931 : 38.
Cilix filipjevi Kardakoff ; Inoue, 1958 : 13.

Distinguished from the Japanese subspecies *malivora* by the male and female genitalia and by the shape of the medial marking on the fore wing.

Distribution. South-east U.S.S.R. (type-locality), Korea and north-east China (several examples from Manchuria in the Naturhistorisches Museum, Vienna, two examples in the BM(NH), and one in the Museum Koenig, Bonn).

Type. Holotype ♂, S. Ussurigebiet, Russ Inseln [8 Km. S.W. of Vladivostock] ; Zool. Mus. Berlin genitalia slide No. 101. In the Zoological Museum, Berlin.

Cilix filipjevi malivora Inoue

(Pl. 13, fig. 387 ; Text-figs. 279)

Cilix filipjevi malivora Inoue, 1958 : 13. [Good figs. ♂ genitalia.]

Separable from the nominate subspecies by the male and female genitalia and the shape of the medial marking on the fore wing.

Type. Holotype ♂, [Japan, Honshu], Hida-niigawa, 3–4.viii.1954 (*S. Issiki*). In the Inoue Collection.

Cilix patula sp. n.

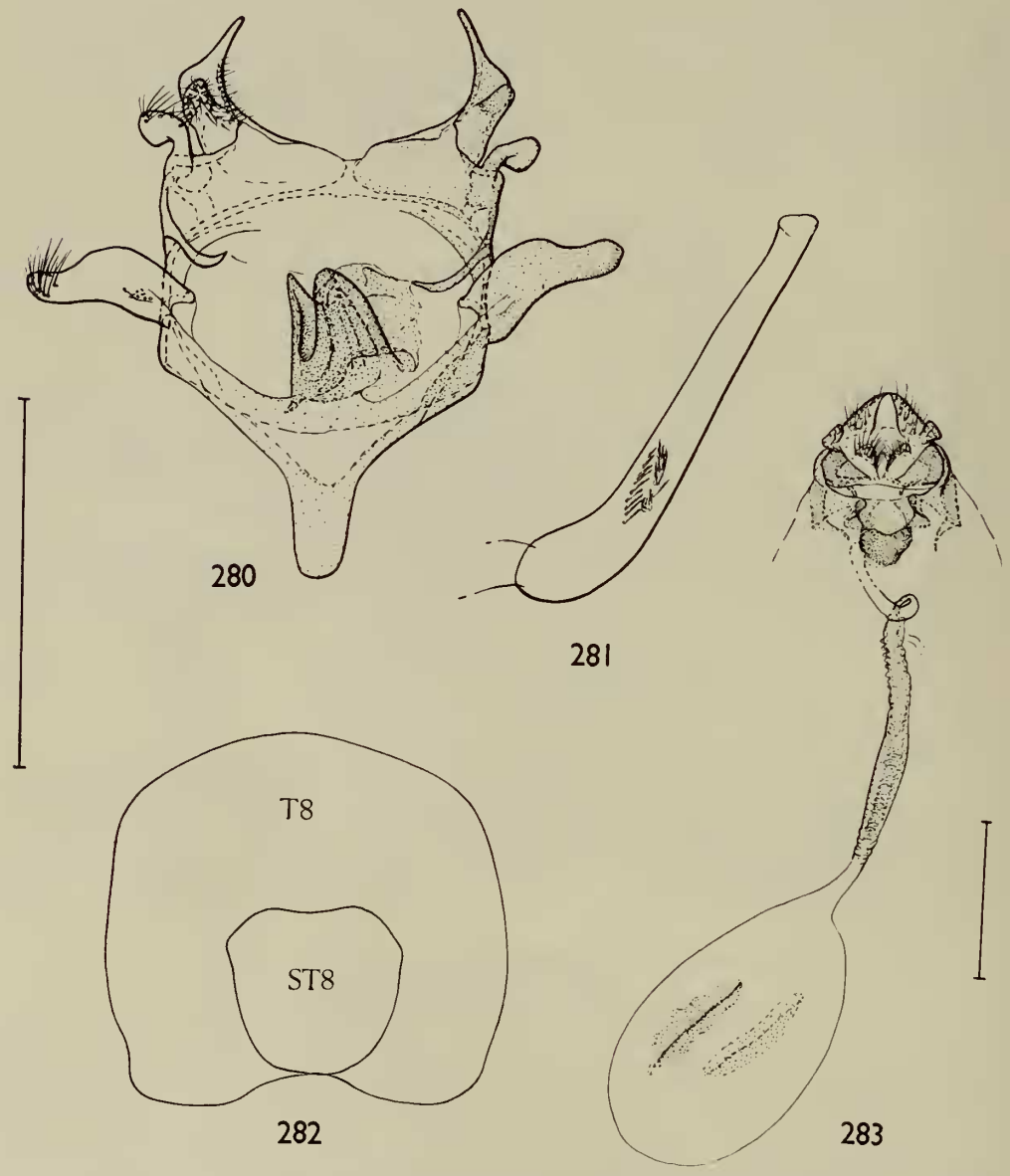
(Pl. 13, fig. 383 ; Text-figs. 280–283)

This species is probably most closely allied to *danieli*. It can be separated with certainty from the latter by the male genitalia (particularly the elongate saccus, broad valves, spatulate gnathus, and longer socii and valve processes). [See note on possible colour-pattern difference under *danieli*.] It can be distinguished from *filipjevi*, which occurs in northern China (Manchuria), by the broader medial marking of the fore wing and by the genitalia of both sexes, particularly the anellus, socii and uncus in the male, and the length of the ductus bursae and the shape of the ninth segment in the female.

Wing. ♂ 10·0–12·5 mm. (4) ; ♀ 11·0–12·5 mm. (5).

Type. Holotype ♂, China, N. Yunnan, Likiang, 30.viii.1935 (*Höne*) ; Drepanidae genitalia slide No. 1017. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn.* China : 62 ♂, 5 ♀, N. Yunnan, Likiang, 15.iii–8.iv.1935, 24.v.1937 (*Höne*) ; 1 ♂, N. Yunnan, A-tun-tse, *c.* 3000 m., 18.v.1937



Figs. 280–283. *Cilix patula*, genitalia. 280, ♂ ; 281, aedeagus ; 282, ♂ eighth tergite and sternite ; 283, ♀.

(*Höne*). *BM(NH)*. China : 5 ♂, 1 ♀, N. Yunnan, Likiang, 1.vii.1934, 23.iii–3.ix.1935 (*Höne*), *Daniel Collection, Munich*. China : 2 ♂, N. Yunnan, Likiang, 1.vii, 8.ix.1935 (*Höne*).

Cilix danieli sp. n.

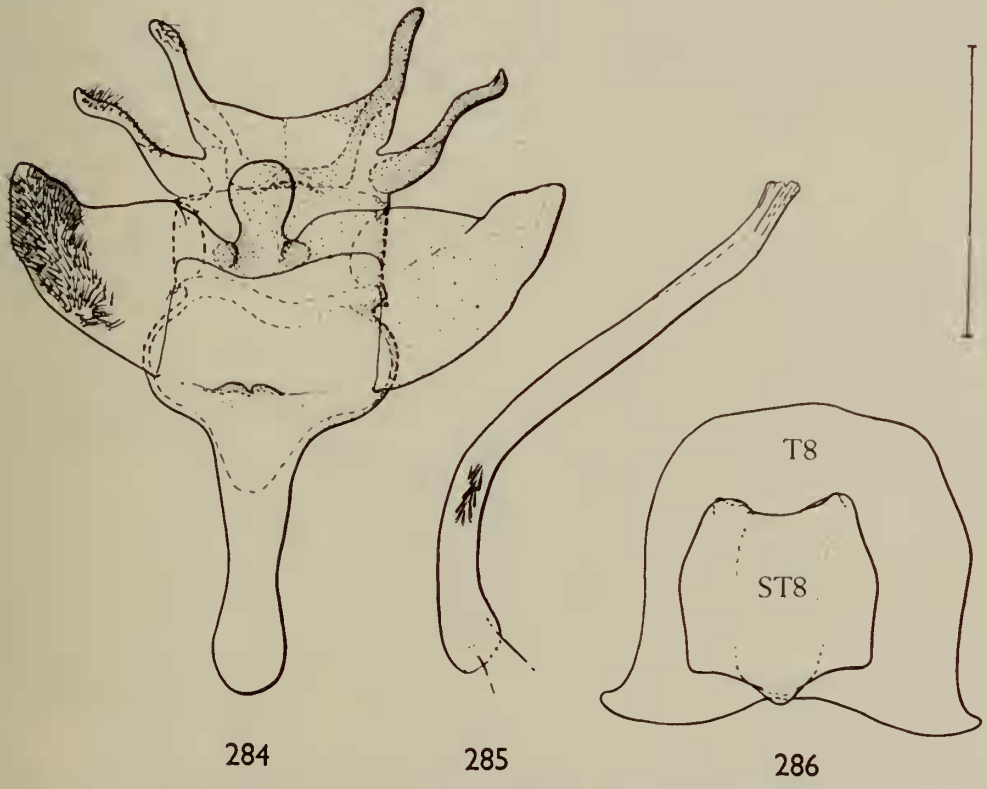
(Text-figs. 284–286)

Separable from its close ally *patula* by the male genitalia (see *patula*), and by the postmedial fascia on the fore wing which in the few specimens available for study is much less strongly marked than in *patula*.

Wing. ♂ 11·0–12·0 mm. (3) ; ♀ 11·5 (1).

Holotype ♂. China : Shansi, Mien-Shan, *c.* 2000 m., 1.viii.1937 (*Höne*) ; Drepanidae genitalia slide No. 1671. In the Museum Koenig, Bonn.

Paratypes. *Museum Koenig, Bonn*. China : 1 ♂, 1 ♀, Shansi, Mien-shan, *c.* 2000 m. 3–9.viii.1937 (*Höne*). *BM(NH)*. China : 1 ♂, Shansi, Mien-shan *c.* 2000 m., 31.vii.1937 (*Höne*). *Daniel Collection, Munich*. China : 1 ♂ Shansi, Mien-shan, *c.* 2000 m., 14.vii.1937 (*Höne*).



Figs. 284–286. *Cilix danieli*, ♂ genitalia. 284, ♂ ; 285, aedeagus ; 286, eighth tergite and sternite.

Cilix tatsienluica Oberthür

(Pl. 13, fig. 388 ; Text-figs. 287–290)

Cilix spinula tatsienluica Oberthür, 1916 : 371.
Cilix tatsienluica Oberthür ; Oberthür, 1917 : 41. [Good fig.]
Cilix glaucata var. *tatsienluica* Oberthür ; Gaede, 1931 : 38.

This species is readily distinguished from the rest of the genus by the absence on the fore wing of a terminal fascia, the poorly marked postmedial fascia and, except at the apex, by the white fringe. The male and female genitalia are also diagnostic (in particular, the presence of a single signum in the female and the structure of the aedeagus, anellus, gnathus, valves and uncus in the male).

Distribution. China (Szechwan, Hupeh, Yunnan, Shansi, Shensi).

Material examined. Type. I select as LECTOTYPE a ♀ syntype in the BM(NH), labelled : Ta-tsien-Lou, Chasseurs indigènes, 1893 ; Drepanidae genitalia slide No. 1021.

Other material. *BM(NH)*. China : 1 ♂, [Szechwan), Ta-tsien-Lou, v–vi.1866 ; 1 ♂, [Szechwan), Tsekou, 1898 (*Dubernard*) ; 1 ♂, [Hupeh], Chang Yang, vi.1888 (*Pratt*). *Museum Koenig, Bonn.* China : numerous examples from Shansi, Mien-shan, and S. Shensi, Tapaishan ; 4 ex., N. Yunnan. *Daniel Collection, Munich.* China : 3 ex., Shansi, Mien-Shan ; *c.* 2000 m. (*Höne*) 3 ex., S. Shensi, Tapaishan im Tsinling, *c.* 1700 m. (*Höne*) ; 2 ex., N. Yunnan, A-tun-tse, *c.* 3000 m. (*Höne*).

MACRAUZATA Butler

(Pl. 13, fig. 385)

Macrauzata Butler, 1889 : 43. Type-species, *Comibaena fenestraria* Moore, 1867 : 639, by monotypy.
Macrauzata Butler ; Gaede, 1931 : 4.
Macrauzata Butler ; Inoue, 1960 : 314. [Good figs.]

This genus has been recently reviewed by Inoue (1960 : 314) who added a new polytypic species *maxima* [Japan and China] to the genus. The colour-pattern (in particular the large hyaline patches in both wings) and the genitalia distinguish *Macrauzata* from all other Drepaninae. Its affinities are doubtful.

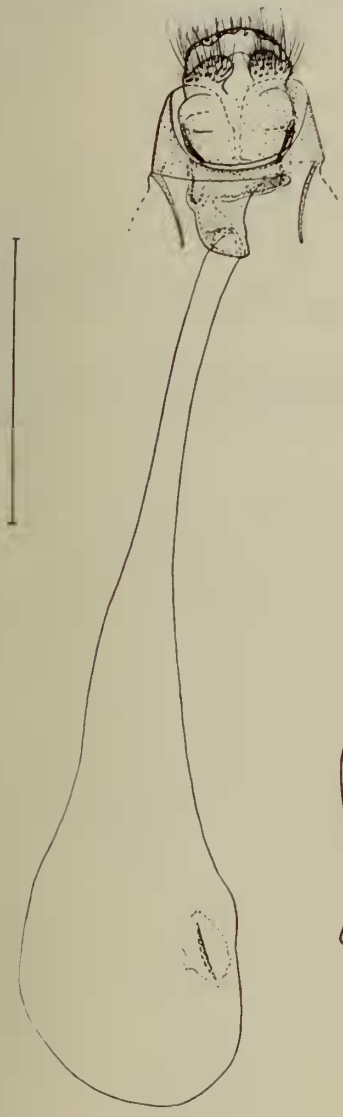
Distribution. Three species are known : *fenestraria* Moore (1867 : 639) [India, Sikkim], *minor* Okano (1959 : 37) [Formosa] and *maxima*. *M. maxima* Inoue (1960 : 314) comprises two subspecies ; the nominate subspecies [Japan] and *maxima chinensis* Inoue (1960 : 314) [China] (see Pl. 13, fig. 385). In addition to the type from Szechwan and the paratype from Chekiang listed by Inoue (1960) for *chinensis*, the provinces of Yunnan, Hunan, Fukien and Kiangsu are represented by specimens in the Museum Koenig, Bonn. A specimen labelled ' Mongolia Whitely ' in the BM(NH) may also prove to represent this subspecies. (See Table 1.)

The genus *Macrauzata* occurs also in the Philippines, Celebes, Sumatra and Java but the specific identity of the available material, in the BM(NH), has yet to be investigated.

PHALACRA Walker

(Pl. 13, fig. 384 ; Text-figs. 291–293)

Phalacra Walker, 1866 : 1638. Type-species *Phalacra metagonaria* Walker, 1866 : 1639, by monotypy. Holotype ♂, ' Hindostan ' [India] ; in the BM(NH). [*P. metagonaria* Walker is a junior subjective synonym of *Hemerophila vidhisara* Walker, 1860 : 319.]
Phalacra Walker ; Gaede, 1931 : 13.



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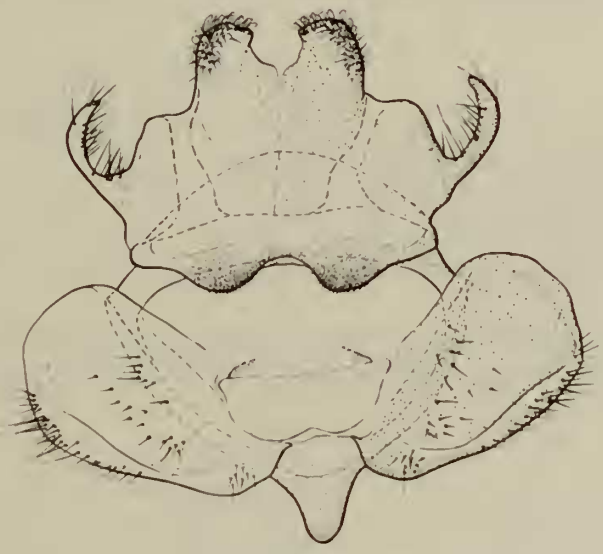

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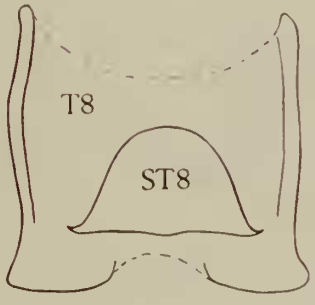

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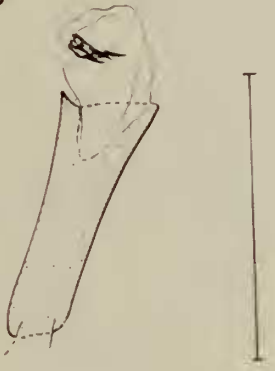

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FIGS. 287–290. *Cilix tatsienluica*, genitalia. 287, ♀ ; 288, ♂ ; 289, ♂ eighth tergite and sternite ; 290, aedeagus.

The validity of the classification of the species at present included in *Phalacra* needs to be investigated. An examination of the type-species of *Phalacropsis* Swinhoe (1895 : 5) and *Pseuderosia* Snellen (1889 : 15) has shown that these genera have close affinities with *Phalacra*.

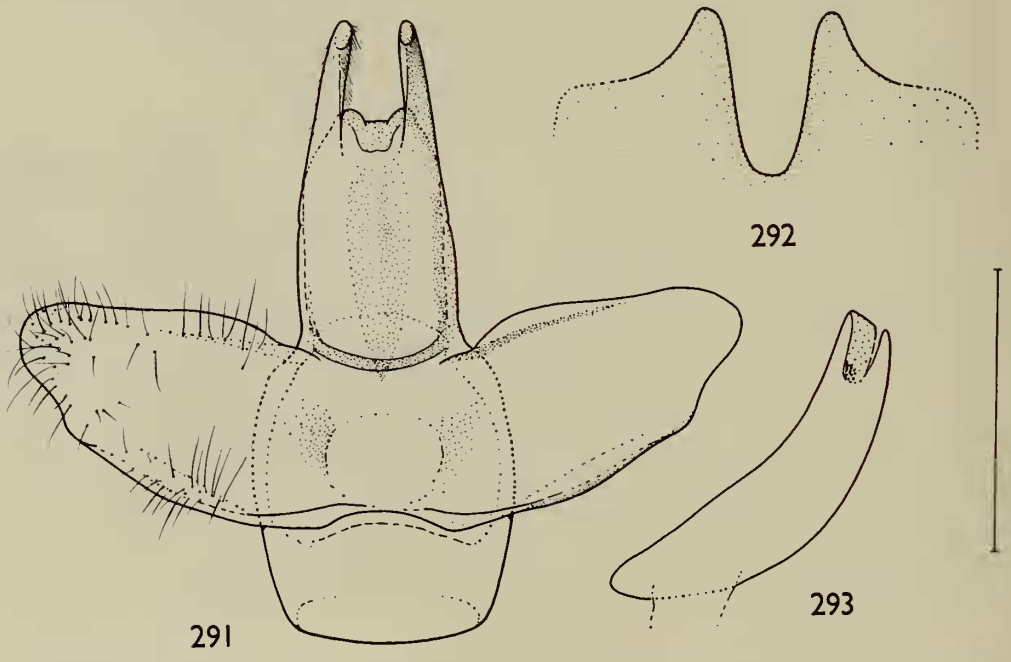
The species of *Phalacra* are Indian, Chinese, Malaysian or Indonesian in distribution. Two species occur in China : *strigata* Warren (see below), and an undescribed species from Kwantung represented by a single male in the Museum Koenig, Bonn.

Phalacra strigata Warren

(Pl. 13, fig. 384 ; Text-figs. 291–293)

Phalacra strigata Warren, 1896 : 338.
Phalacra strigata Warren ; Warren, 1922 : 458.
Phalacra strigata Warren ; Gaede, 1931 : 14.
Phalacra multilineata Warren, 1897 : 16. **syn. n.**
Phalacra multilineata Warren ; Warren, 1922 : 458. [Fig. 48h closely matches the holotype of *strigata*.]

The Chinese examples in the Höne collection at Bonn from Lingping (Kwangsi Province) and Canton (Kwangtung Province), and in the BM(NH) from localities



Figs. 291–293. *Phalacra strigata*, ♂ genitalia. 291, ♂ ; 292, posterior margin of eighth sternite ; 293, aedeagus.

in Szechwan probably represent a new subspecies of *strigata*, but there is insufficient material available from the type-locality to allow a satisfactory comparison to be made.

Distribution. N. India and China.

Types. *strigata*. Holotype ♂, Cherrapunji, xii.1893. In the BM(NH).

multilineata. LECTOTYPE ♀ here selected, labelled : Khasis, July, 1896, Nat. Coll. ; *Phalacra multilineata* Type ♀ Warren ; Rothschild Bequest B.M. 1939–1 ; Drepanidae genitalia slide No. 642. In the BM(NH).

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INDEX

PLATE 1

Albara

FIGS. 296, 297, *reversaria opalescens* ($\times 1\frac{3}{4}$). FIG. 296, ♂ (holotype of *griseotincta*) ; FIG. 297 ♀.

Paralbara ($\times 2$)

FIG. 294, *muscularia*, neotype ♂. FIG. 295, *pallidinota*, holotype ♂. FIG. 298, *spicula*, holotype ♂. FIG. 299, *perhamata*, ♂.

Thymistida

FIG. 300, *nigritincta*, ♂ ($\times 2$).

Agnidra ($\times 2$)

FIG. 301 *scabiosa scabiosa*, ♂. FIG. 302, *scabiosa fixseni*, ♂. FIG. 303, *corticata francki*, ♀. FIG. 304, *corticata corticata*, ♂. FIG. 305, *vinacea*, ♀.

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PLATE 2

Agnidra

FIG. 306, *specularia*, ♂ (×2). FIG. 307, *fenestra*, ♂ (×3). FIG. 308, *discispilaria*, ♂ (×1½). FIG. 309, *hoenei*, holotype ♂ (×2). FIG. 310, *fulvior*, holotype ♂ (×2). FIG. 311, *furva*, holotype ♂ (×2).

Betalbara

FIG. 312, *prunicolor*, ♂ (×3). FIG. 313, *flavilinea flavilinea*, ♀ (×2). FIG. 314, *leucosticta*, ♂ (×3).

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PLATE 3

Betalbara

FIG. 315, *manleyi prolatior*, holotype ♂ (×2). FIG. 316, *cupreogrisea*, ♀ (×2). FIG. 317, *rugosa*, holotype ♂ (×2). FIG. 318, *violacea*, ♀ (×1¾). FIG. 319, *robusta*, ♂ (×2).

Pseudalbara

FIG. 320, *parvula*, ♂ (×3¼). FIG. 321, *fuscifascia*, ♂ (×3).

Nordstroemia

FIG. 322, *vira*, ♀ (×3). FIG. 323, *bicostata bicostata*, holotype ♂ (×3).

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PLATE 4

Nordstroemia

FIG. 324, *duplicata*, lectotype ♂ (×2). FIG. 325, *sumatrana*, holotype ♀ (×1, approx.). FIG. 326, *siccifolia*, ♂ (×2). FIG. 327, *recava*, holotype ♂ (×2). FIG. 328, *humerata*, ♀ (×3). FIG. 329, *undata*, ♂ paratype (×2).

Palaeodrepana (×2)

FIG. 330, *harpagula bitorosa*, holotype ♂. FIG. 331, *harpagula harpagula*, ♂. FIG. 332, *harpagula emarginata*, holotype ♂.

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PLATE 5

Nordstroemia

FIGS. 333–335, *vira*, ♂ genitalia, Drepanidae genitalia slide No. 752. FIG. 333, genitalia. FIG. 334, aedeagus. FIG. 335, 8th abdominal segment with tergite, sternite and lateral sacs. FIG. 336, *argenticeps*, holotype ♂ genitalia, Drepanidae genitalia slide No. 777.

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PLATE 6

Nordstroemia

FIGS. 337, 338, *argenticeps*, holotype ♂ genitalia, Drepanidae genitalia slide No. 777. FIG. 337, aedeagus. FIG. 338, posterior end of abdomen showing 7th sternite, 8th tergite and 8th sternite. FIGS. 339, 340, *sumatrana*, holotype ♂ genitalia, Drepanidae genitalia slide No. 1665. FIG. 339, genitalia. FIG. 340, posterior end of abdomen showing 7th sternite, 8th tergite and 8th sternite.


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PLATE 7

Nordstroemia

FIGS. 341, 342, *lilacina*, lectotype ♂ genitalia, Drepanidae genitalia slide No. 780. FIG. 341, aedeagus. FIG. 342, genitalia. FIG. 343, *simillima*, lectotype ♂, Drepanidae genitalia slide No. 779, posterior end of abdomen showing 7th sternite, 8th tergite, and 8th sternite. FIG. 344, *sumatrana*, ♂, Drepanidae genitalia slide No. 1665, aedeagus.

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PLATE 8

Nordstroemia

FIGS. 345, 346, *siccifolia*, ♂ genitalia, Drepanidae genitalia slide No. 1666. FIG. 345, aedeagus. FIG. 346, genitalia. FIGS. 347, 348, *simillima*, lectotype ♂ genitalia, Drepanidae genitalia slide No. 779. FIG. 347, genitalia. FIG. 348, aedeagus.


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PLATE 9

Nordstroemia

FIG. 349, *ochrozona*, posterior end of abdomen, showing 7th sternite, 8th tergite and 8th sternite, Drepanidae genitalia slide No. 938. FIG. 350, *humerata*, posterior end of abdomen, showing 7th sternite, 8th tergite and 8th sternite, Drepanidae genitalia slide No. 1670. FIG. 351, *lilacina*, posterior end of abdomen, showing 7th sternite, 8th tergite and 8th sternite, Drepanidae genitalia slide No. 780. FIG. 352, *siccifolia*, posterior end of abdomen, showing 7th sternite, 8th tergite, and 8th sternite, Drepanidae genitalia slide No. 1666.


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PLATE 10

Nordstroemia

FIGS. 353, 354, *ochrozona*, ♂ genitalia, Drepanidae gentialia slide No. 938. FIG. 353, genitalia. FIG. 354, aedeagus. FIGS, 355, 356, *humerata* ♂ genitalia, Drepanidae genitalia slide No. 1670. FIG. 355, genitalia. FIG. 356, aedeagus.

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PLATE 11

Didymana

FIG. 357, *bidens*, ♂ (×2).

Drepana (×2)

FIG. 358, *curvatula curvatula*, ♂. FIG. 360, *pallida cretacea*, ♂. FIG. 361, *pallida flexuosa*, holotype ♂. FIG. 362, *dispilata rufata*, holotype ♂. FIG. 363, *curvatula acuta*, ♂. FIG. 364, *dispilata grisearipennis* Strand, holotype ♀. FIG. 365, *rufofasciata*, lectotype ♂.

Strepsigonia

FIG. 359, *diluta*, ♂ (×3).

Canucha (×1)

FIG. 366, *bouvieri*, holotype ♀. FIG. 367, *specularis*, ♀. FIG. 368, *duplexa duplexa*, ♂.


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PLATE 12

Callidrepana (×2)

FIG. 369, *ovata*, holotype ♂. FIG. 370, *gemina curta*, holotype ♂. FIG. 371, *gemina gemina*, holotype ♂. FIG. 372, *hirayamai forcipulata*, holotype ♂.

Drapetodes

FIG. 373, *mitaria*, ♀ (×3).

Thymistadopsis

FIG. 374, *trilinearia*, ♀ (×2).

Deroca

FIG. 375, *hyalina latizona*, ♀ (×2).

Callicillix (×2)

FIG. 376, *abraxata abraxata*, ♂. FIG. 377, *abraxata nguldoe*, ♂.

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PLATE 13

Hyalospectra

FIG. 378, *hyalinata*, lectotype ♂ of *postfasciata* (synonym) (×2).

Macrocilix (×2)

FIG. 379, *orbiferata orbiferata*, ♂. FIG. 380, *taiwana*, ♀. FIG. 381, *mysticata brevinotata*, holotype ♂. FIG. 382, *mysticata watsoni*, paratype ♂.

Cilix (×3½)

FIG. 383, *patula*, ♂. FIG. 386, *filipjevi filipjevi*, ♂. FIG. 387, *filipjevi malivora*, ♂. FIG. 388, *tatsienluica*, ♀.

Phalacra

FIG. 384, *strigata*, ♂ (×2).

Macrauzata

FIG. 385, *maxima chinensis*, ♂ (×2).

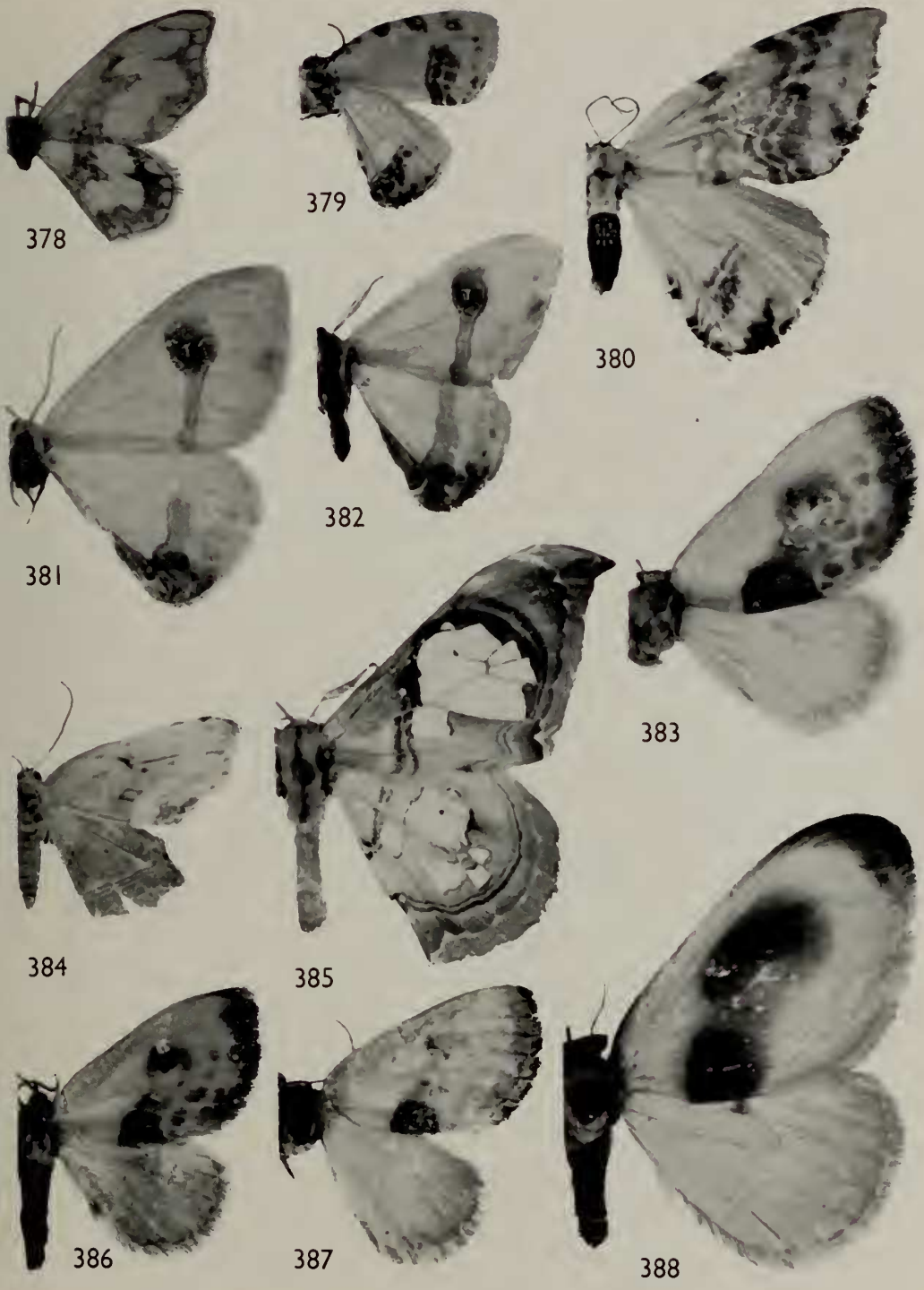
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PLATE 14

Thymistida

FIGS. 389–392, *tripunctata* genitalia, Drepanidae genitalia slides Nos. 122(♂) and 123(♀) FIG. 389, ♂ ; FIG. 390, aedeagus ; FIG. 391, posterior end of abdomen showing modified seventh and eighth sternites and eighth tergite ; FIG. 392, ♀.


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